

FIG. 1

Acme Router & Rocket, Inc.

Network	ID	Parent Address Type	Allocation Type & Order	Aggregate	Lending Limits (Min/Max)	Reuse Interval	Description	Address Blocks	Block Status
Acme Router & Rocket, Inc.	1	0	IPv4	Rated Fit Low	Y	/28-/26	Acme Routers & Rockets	192.168.120.144 /28 192.168.120.208 /28 192.168.120.224 /30 192.168.120.228 /30 192.168.120.232 /29 192.168.120.240 /28	Free Free Connection Free Free Delegated
	3	1	IPv4	Utilization Fit Low	Y	None	Accounting Dept.	192.168.120.128 /29 192.168.120.136 /29	Connection Free
	4	1	IPv4	Utilization Fit Low	Y	None	Engineering Dept.	192.168.120.64 /26	Connection
	5	4	IPv4	Utilization Fit Low	N	None	Lab Area	10.10.10.0 /24	Allocated
	2	1	IPv4	Utilization Fit Low	Y	None	Acme headquarters	192.168.120.0 /26	Connection
	9	1	IPv4	Utilization Fit Low	Y	None	Manufacturing Dept.		
	10	9	IPv4	Utilization Fit Low	Y	None	Assembly Line		
	6	1	IPv4	Rated Fit Low	Y	/28-/27	Sales Dept.	192.168.120.160 /29 192.168.120.168 /31 192.168.120.170 /31 192.168.120.172 /30	Connection Connection Free Connection
	7	6	IPv4	Utilization Fit Low	Y	None	Eastern Sales office	192.168.120.176 /29 192.168.120.184 /29	Connection Free
	8	6	IPv4	Utilization Fit Low	Y	None	Western Sales Region	192.168.120.192 /29 192.168.120.200 /29	Connection Free

FIG. 2

Acme Router & Rocket, Inc.

Network	Address Blocks	Size	Status	Aggregate Blocks	Aggregate with Descendants	Addresses Used	Total	%Utilization
☐ (4) Acme	192.168.120.144 /28	16	Free	192.168.120.144 /28	192.168.120.0 /24	Local 20	64	72.655%
	192.168.120.208 /28	16	Free	192.168.120.208 /28		Agg. 186		
	192.168.120.224 /30	4	Connection	192.168.120.224 /27				
☐ (4) Accounting	192.168.120.228 /30	4	Free					
	192.168.120.232 /29	8	Free					
	192.168.120.240 /28	16	Delegated					
☐ (4) Engineering	192.168.120.128 /29	8	Connection	192.168.120.128 /28	192.168.120.128 /28	8	16	50%
	192.168.120.136 /29	8	Free					
☐ (4) LAB	192.168.120.64 /26	64	Connection	192.168.120.64 /26	192.168.120.64 /26	64	64	100%
	10.10.10.0 /24	256	Allocated	10.10.10.0 /24				
☐ (4) Headquarters	192.168.120.0 /26	64	Connection	192.168.120.0 /26	192.168.120.0 /26	64	64	100%
☐ (4) Manufacturing						Local 0	0	
						Agg. 0		
☐ (4) Assembly Line						0	0	
☐ (4) Sales	192.168.120.160 /29	8	Connection	192.168.120.160 /28	192.168.120.160 /27 192.168.120.192 /28	Local 14 Agg. 30	16	62.5%
	192.168.120.168 /30	2	Connection					
	192.168.120.170 /30	2	Free					
	192.168.120.172 /30	4	Connection					
☐ (4) Sales East	192.168.120.176 /29	8	Connection	192.168.120.176 /28	192.168.120.176 /28	8	16	50%
	192.168.120.184 /29	8	Free					
☐ (4) Sales West	192.168.120.192 /29	8	Connection	192.168.120.192 /28	192.168.120.192 /28	8	16	50%
	192.168.120.200 /29	8	Free					

FIG. 2A

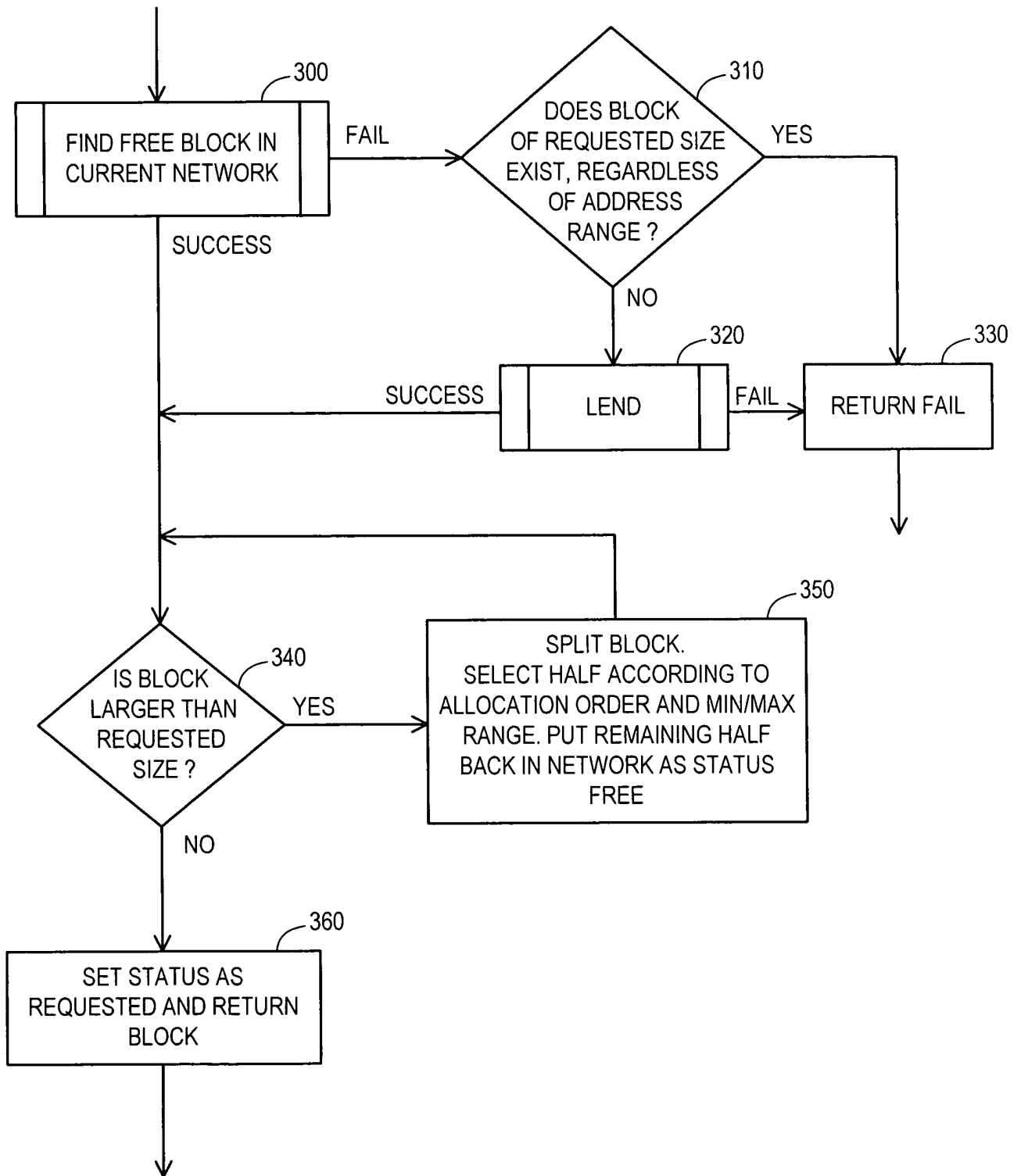


FIG. 3

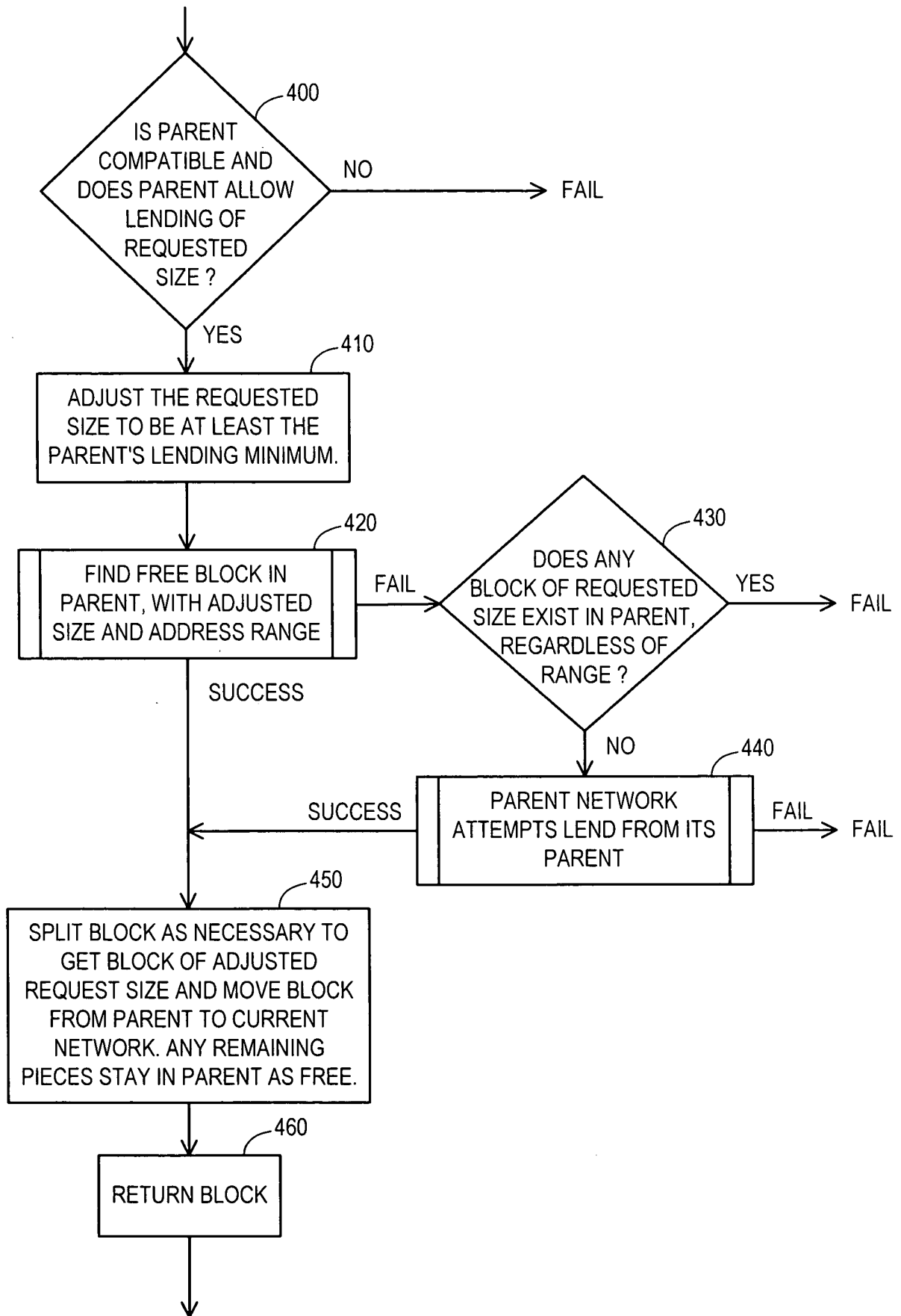


FIG. 4

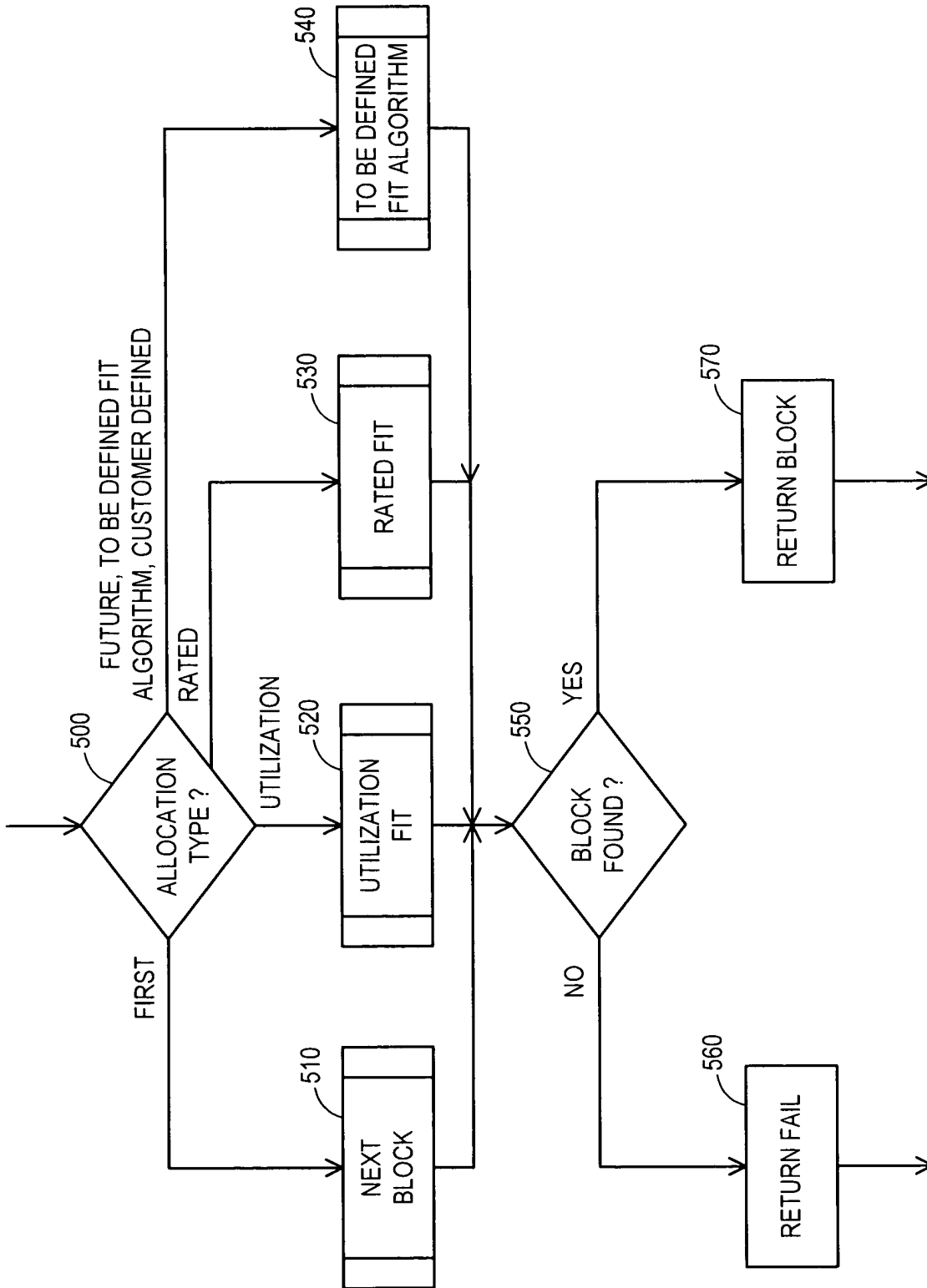


FIG. 5

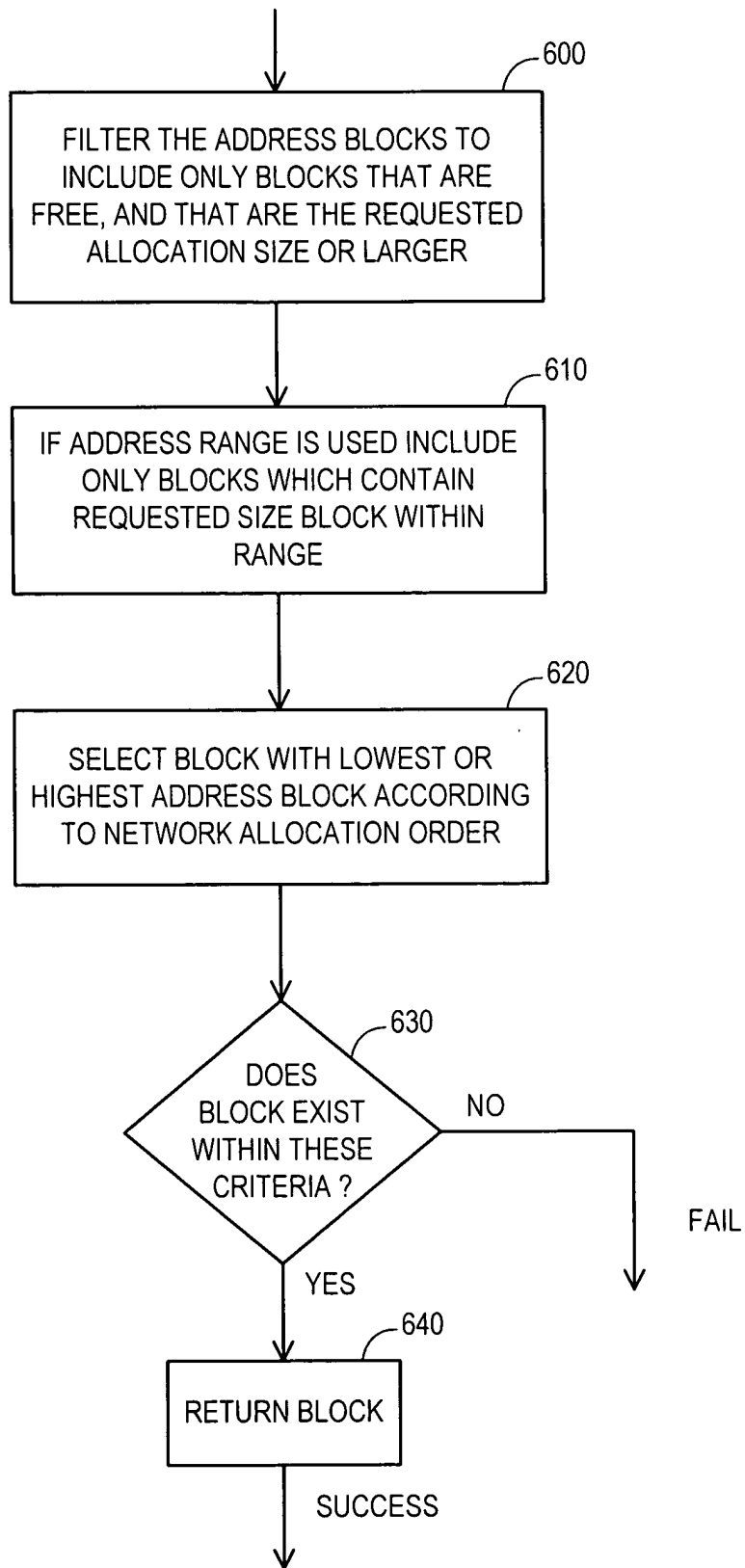


FIG. 6

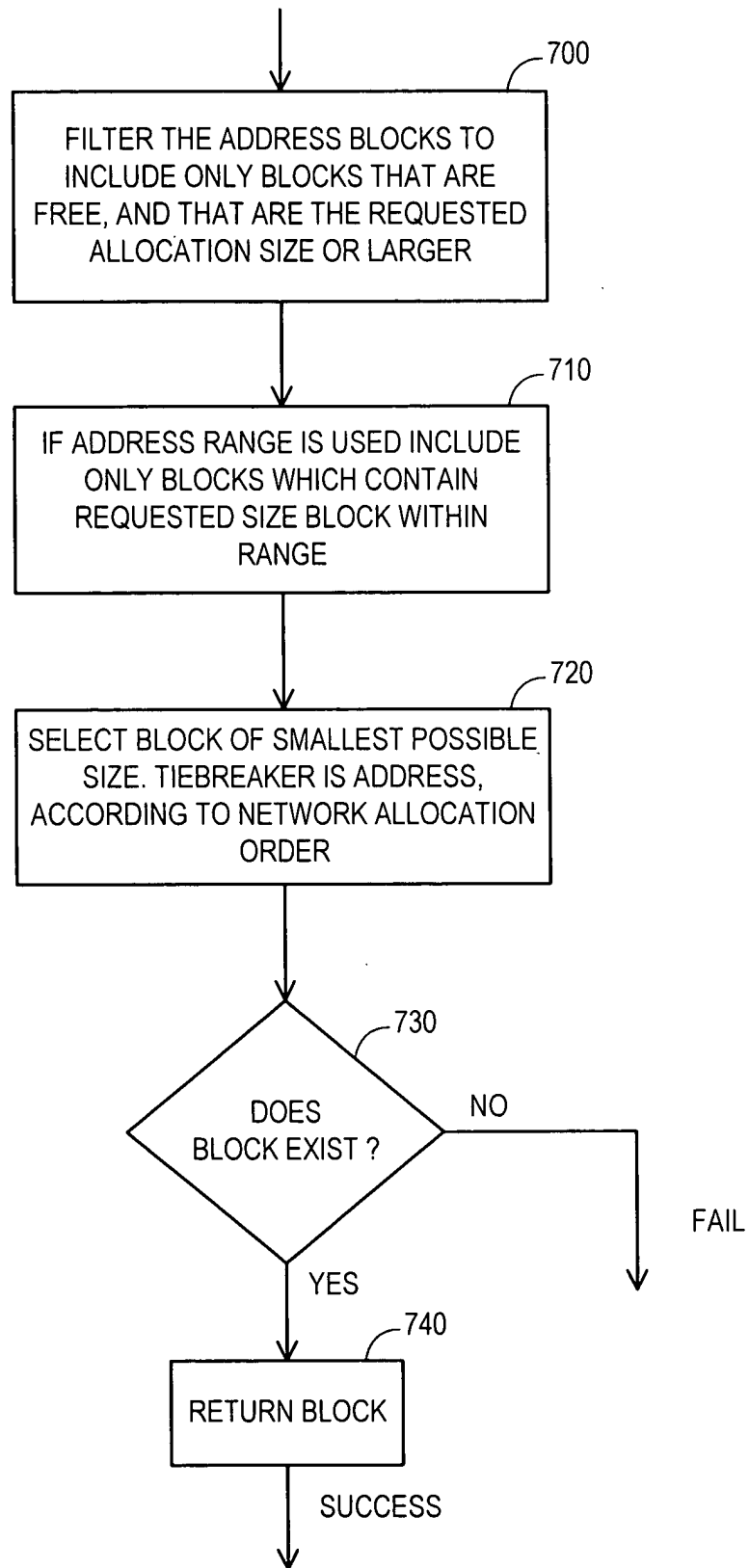


FIG. 7

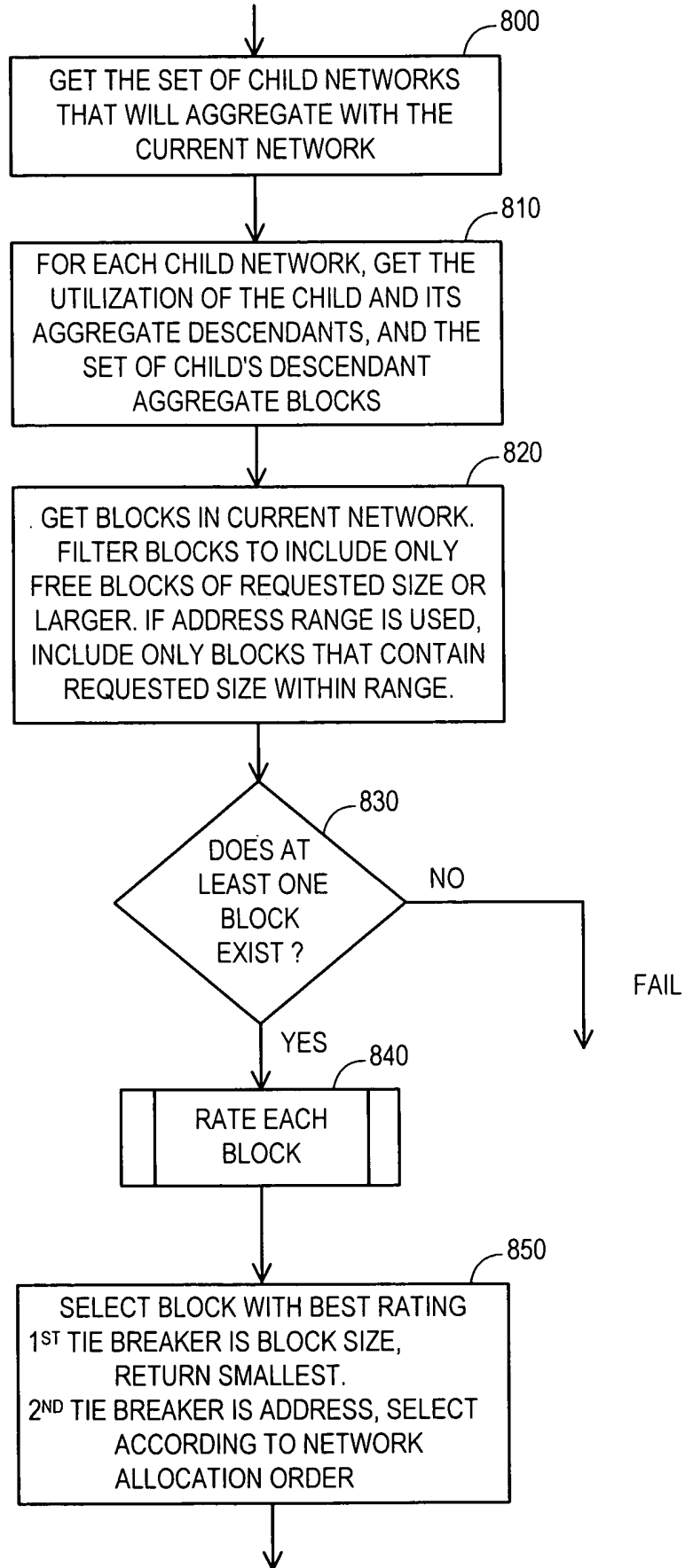


FIG. 8

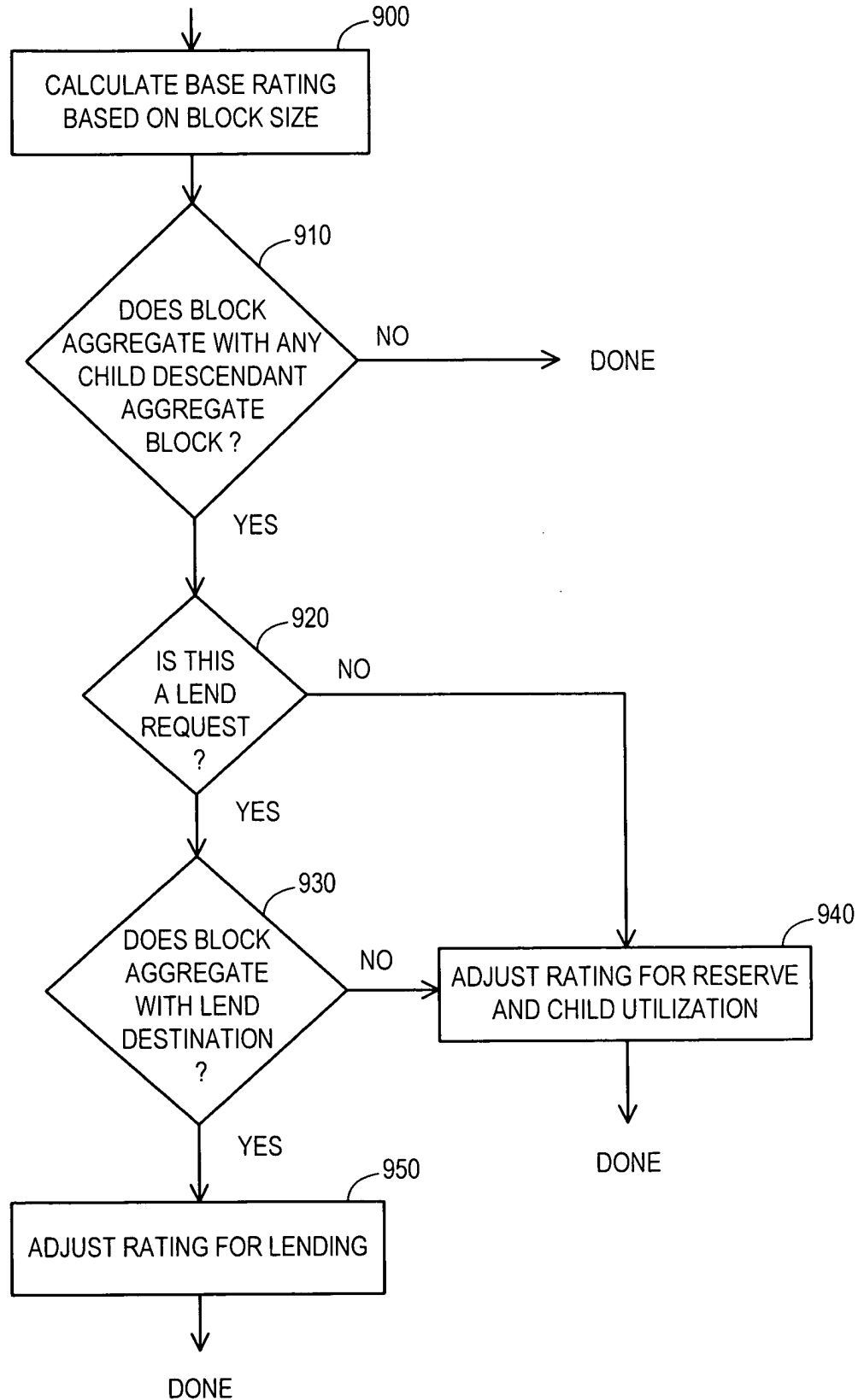


FIG. 9

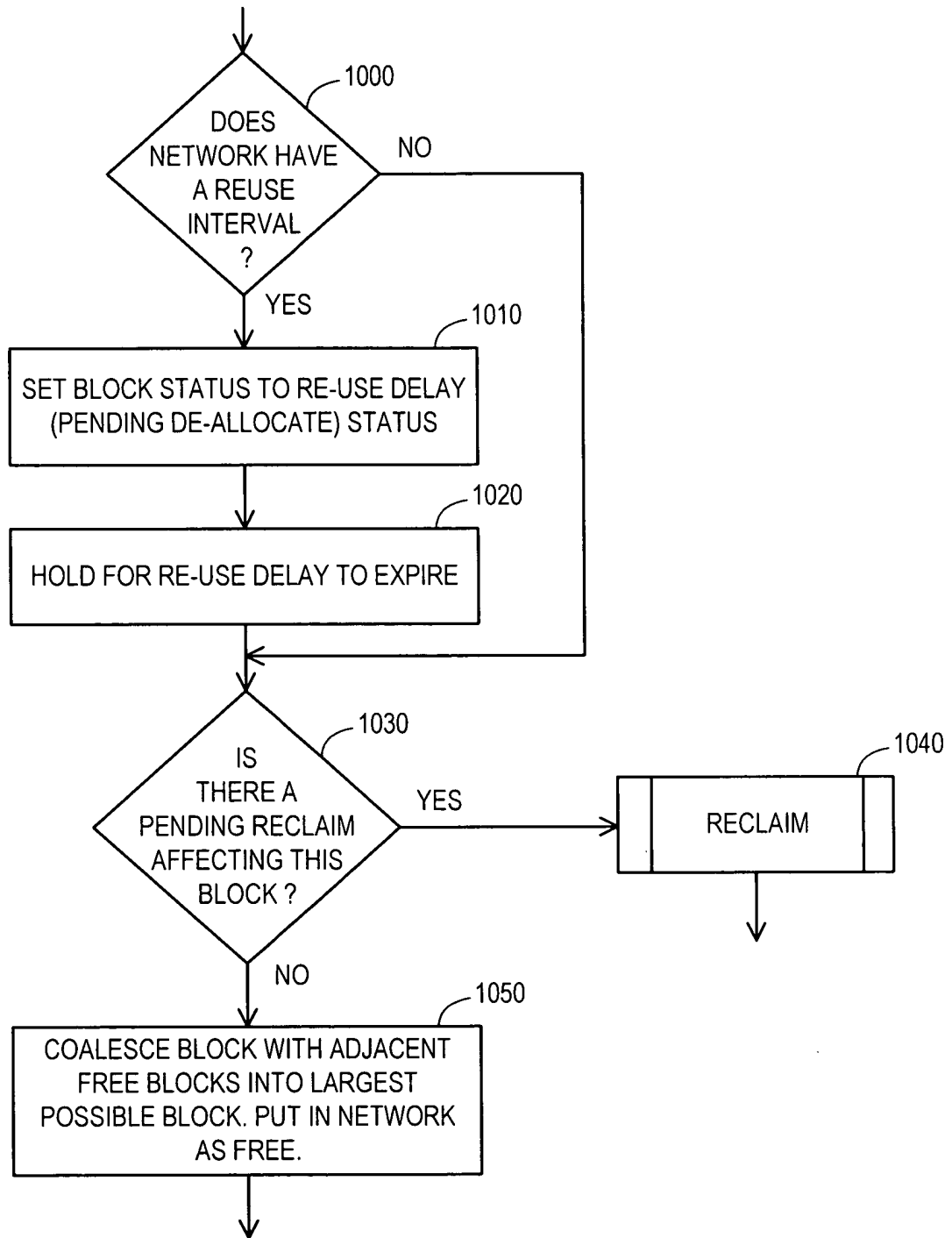


FIG. 10

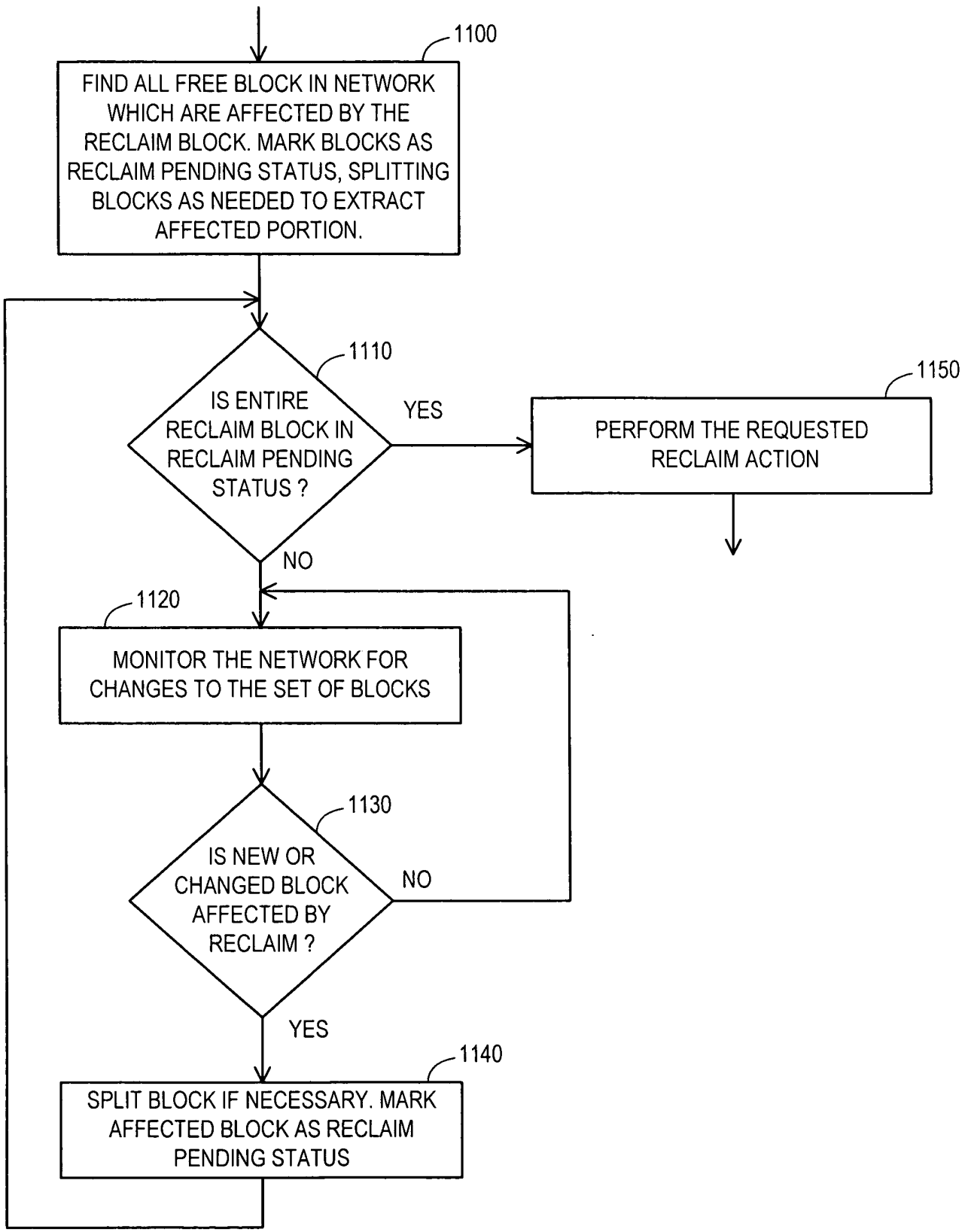


FIG. 11

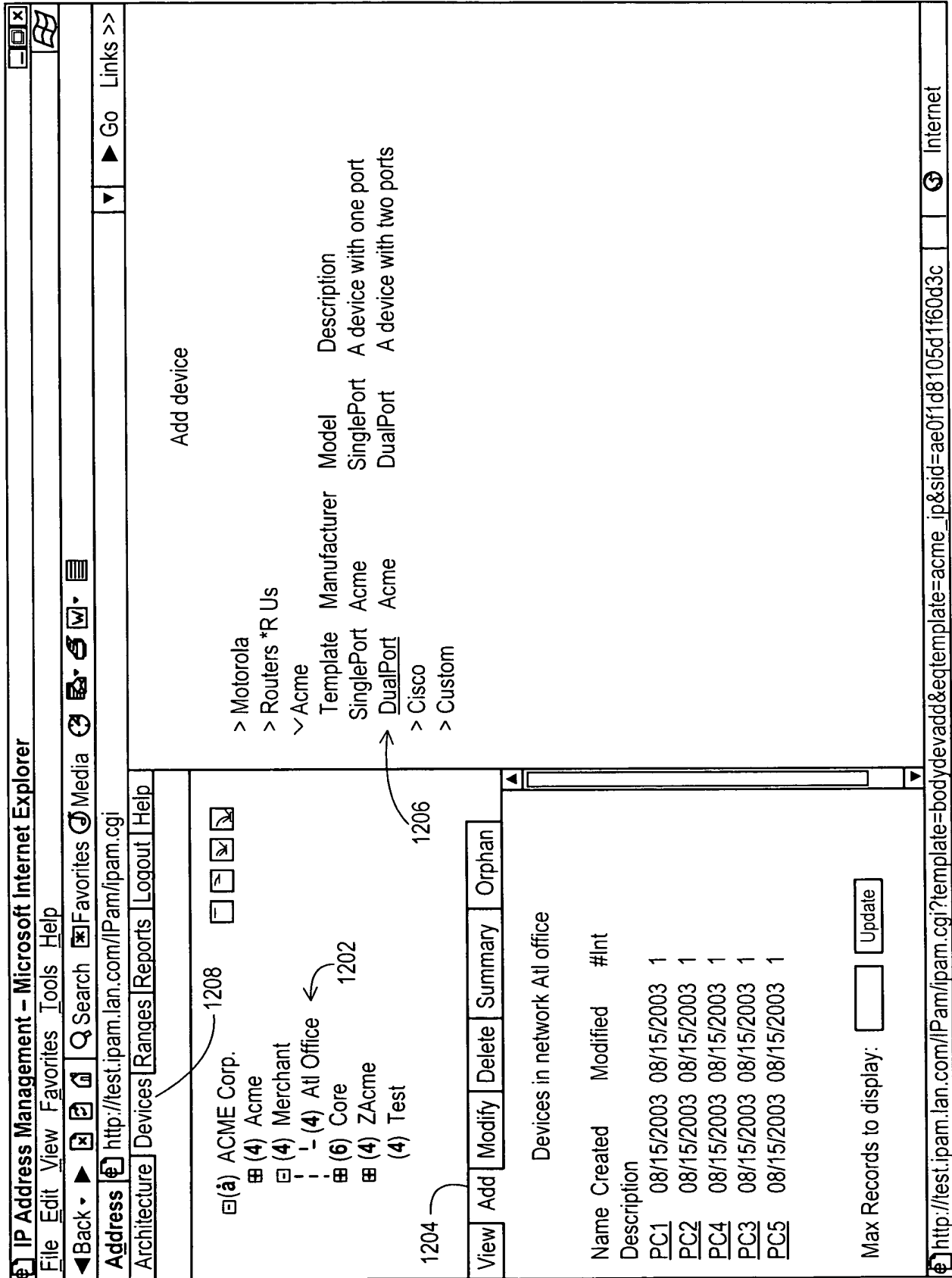


FIG. 12

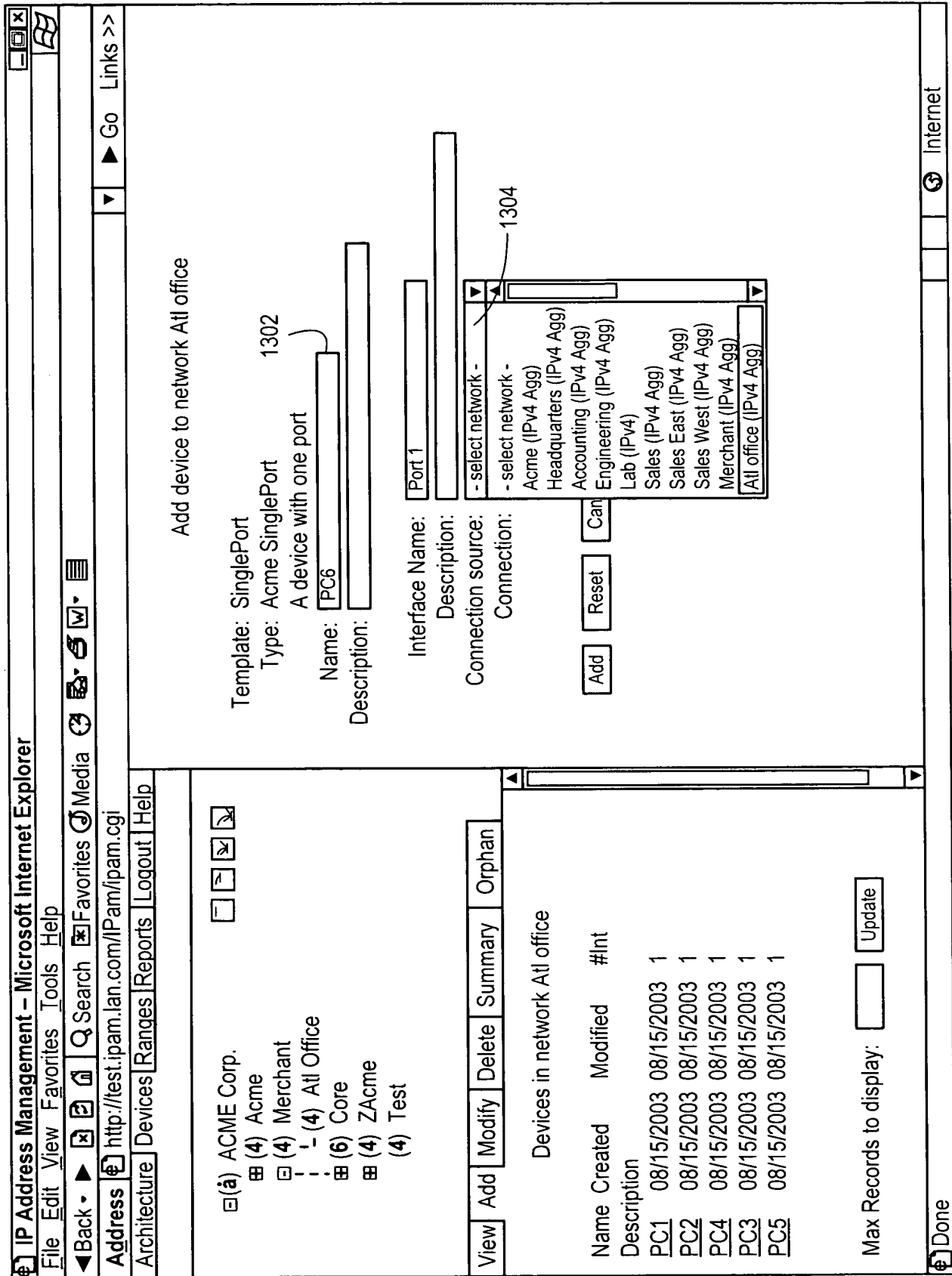


FIG. 13

1300

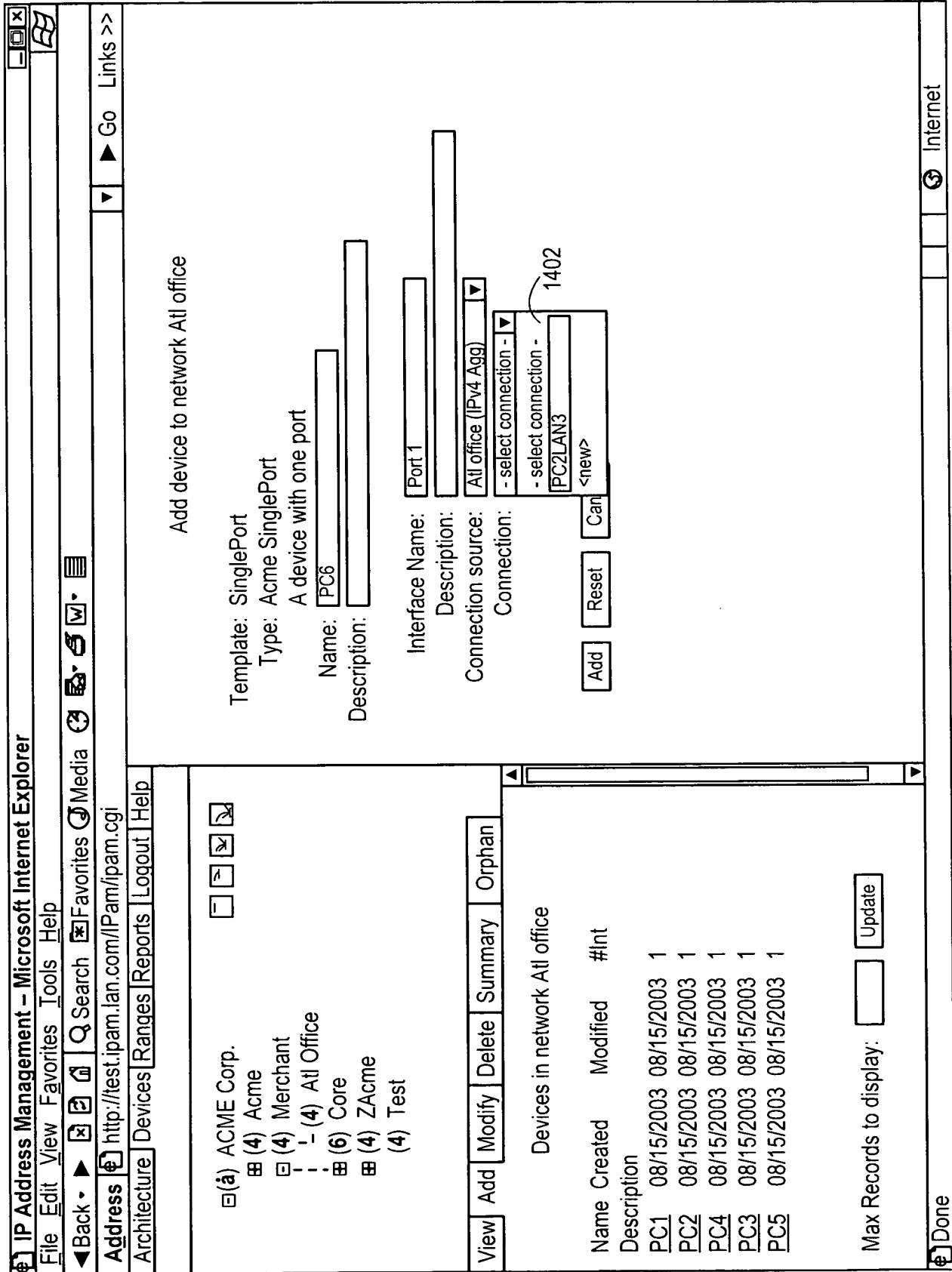


FIG. 14

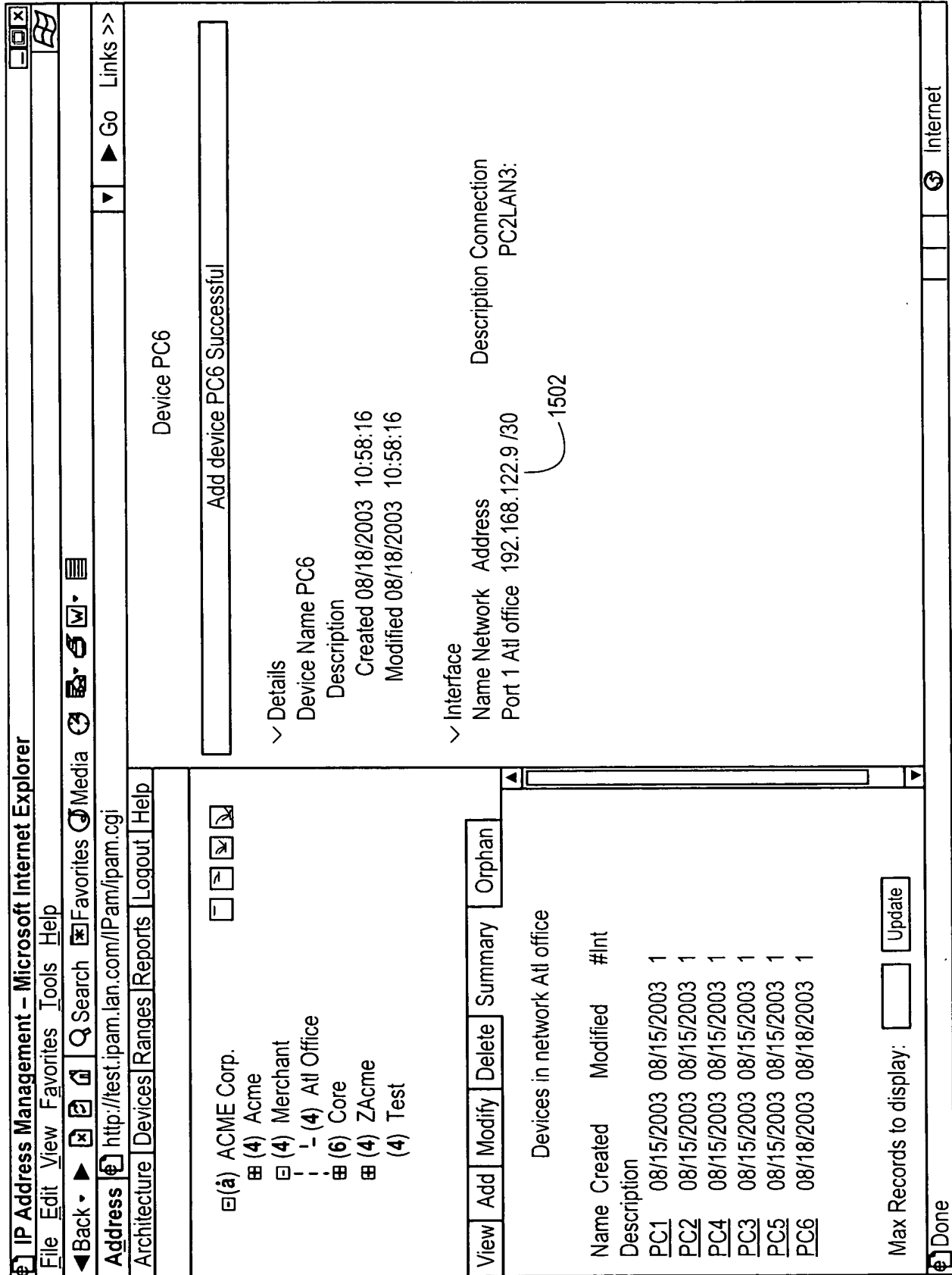


FIG. 15

1500

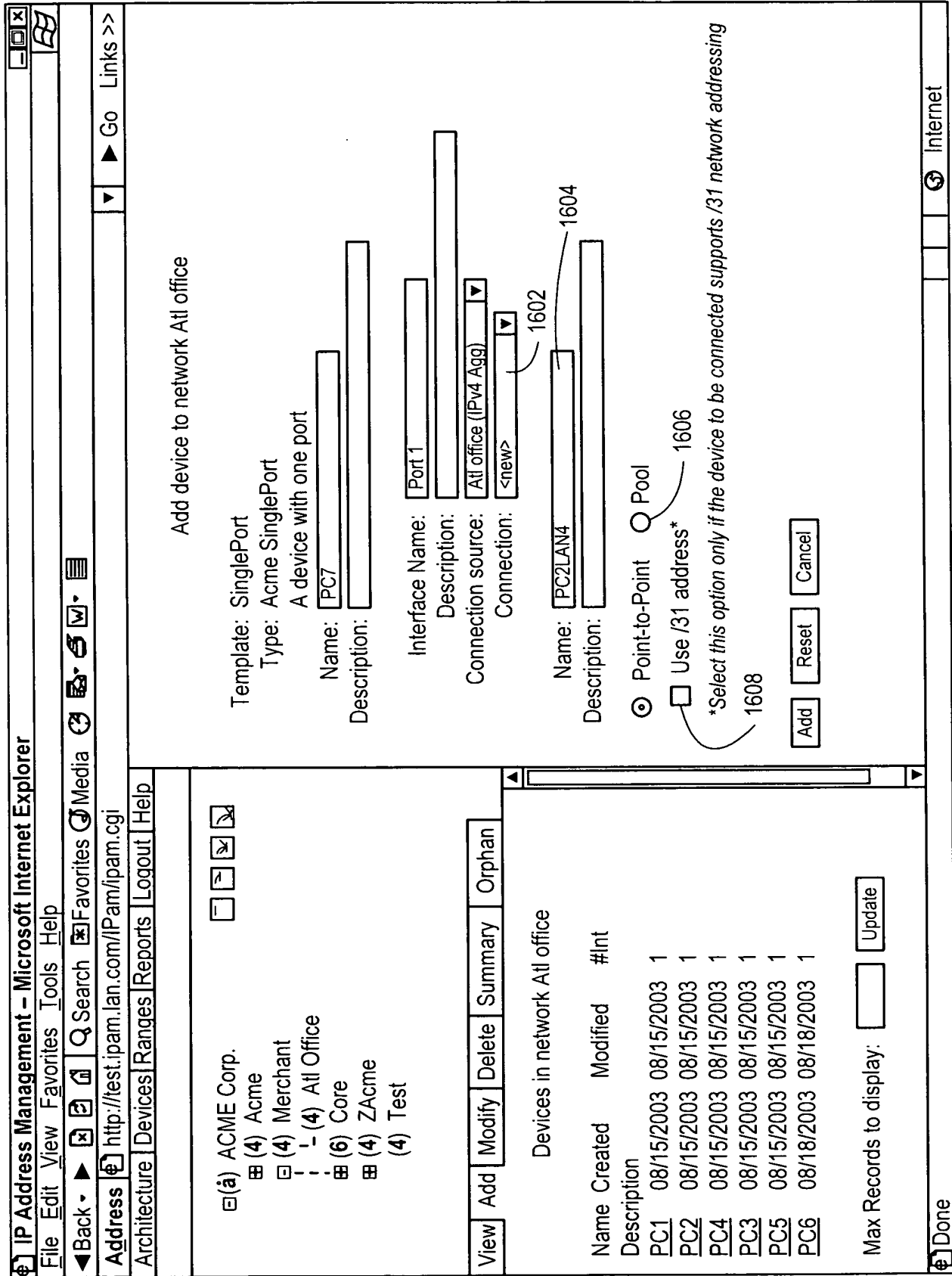


FIG. 16

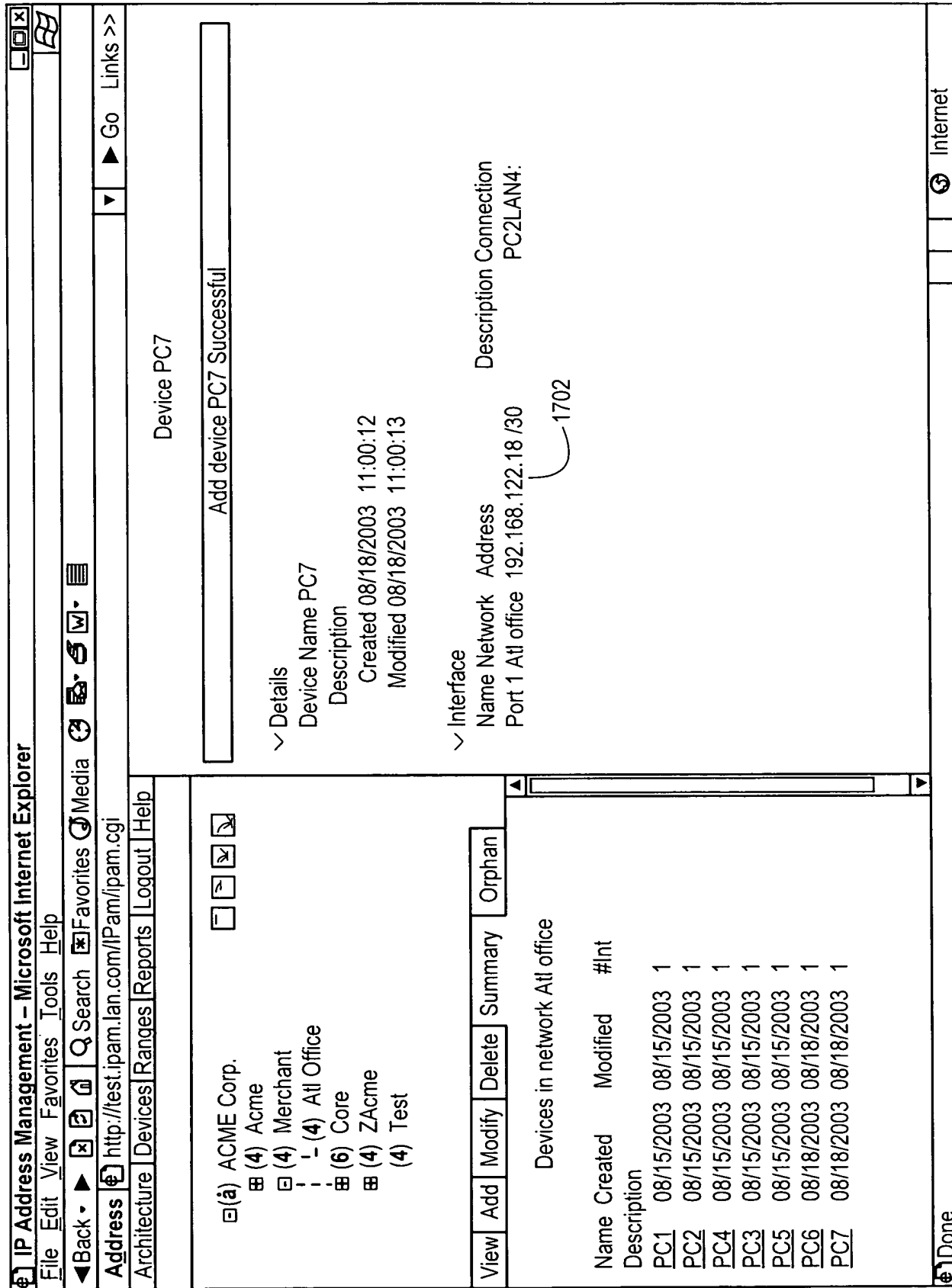


FIG. 17

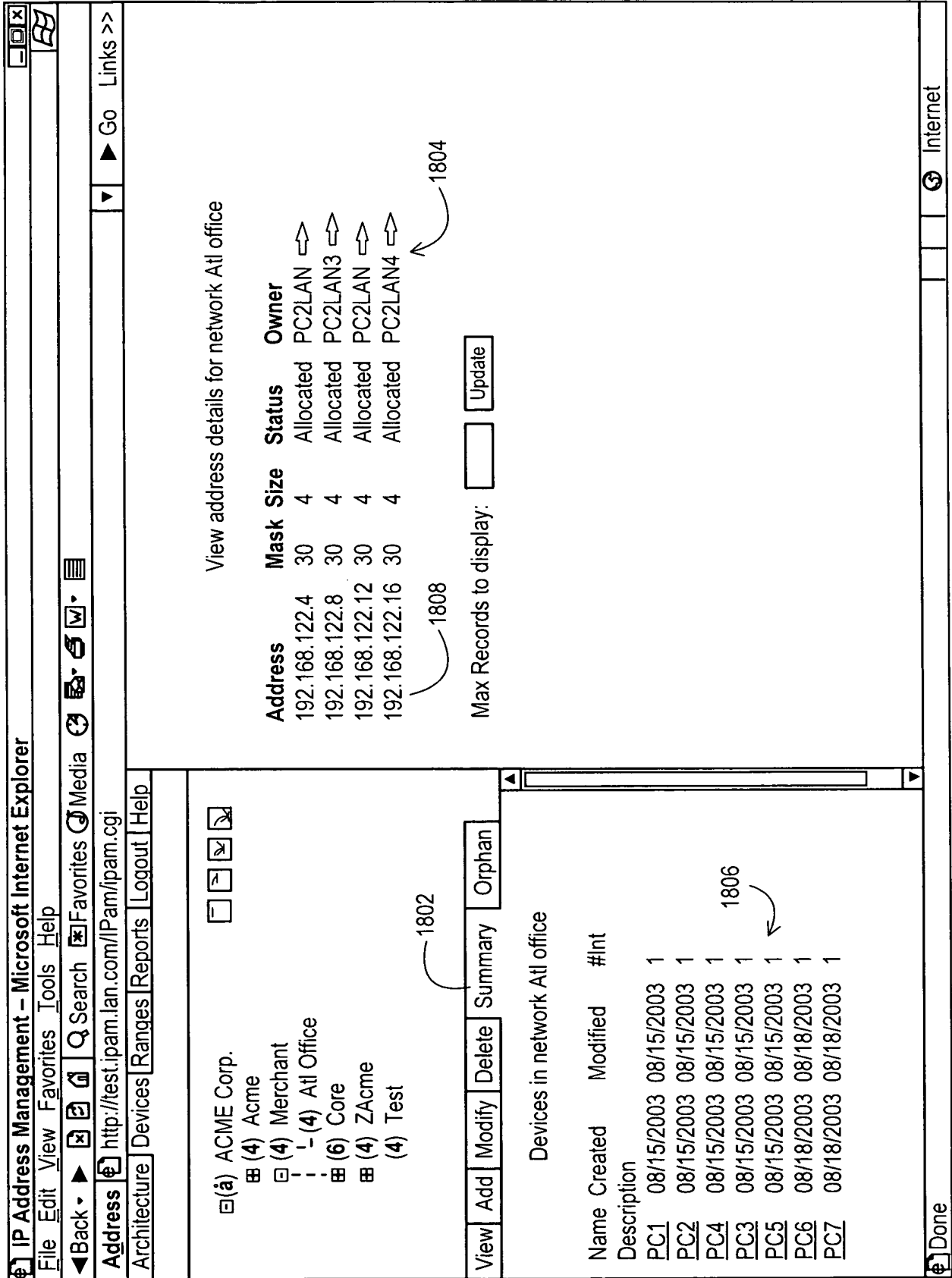


FIG. 18

IP Address Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://test.ipam.tan.com/IPam/ipam.cgi

Architecture Devices Ranges Reports Logout Help

View Add Modify Delete Summary Orphan

Devices in network Atl office

Name	Created	Modified	#Int
PC1	08/15/2003	08/15/2003	1
PC2	08/15/2003	08/15/2003	1
PC4	08/15/2003	08/15/2003	1
PC3	08/15/2003	08/15/2003	1
PC5	08/15/2003	08/15/2003	1
PC6	08/18/2003	08/18/2003	1
PC7	08/18/2003	08/18/2003	1

1906

View address details for network Atl office

Address	Mask	Size	Status	Owner
192.168.122.4	30	4	Allocated	PC2LAN
192.168.122.8	30	4	Allocated	PC2LAN3
192.168.122.12	30	4	Allocated	PC2LAN
192.168.122.16	30	4	Allocated	PC2LAN4

1904

Max Records to display: Update

Network: Atl office
 Block: 192.168.122.16 /30 Size:4

Connection PC2LAN4

Address	Mask	Size	Status	Device Interface
192.168.122.16	32	1	Reserved unusable	1902
192.168.122.17	32	1	Free	
192.168.122.18	32	1	Allocated	PC7 Port 1
192.168.122.19	32	1	Reserved unusable	

Max Records to display: Update

Done Internet

FIG. 19

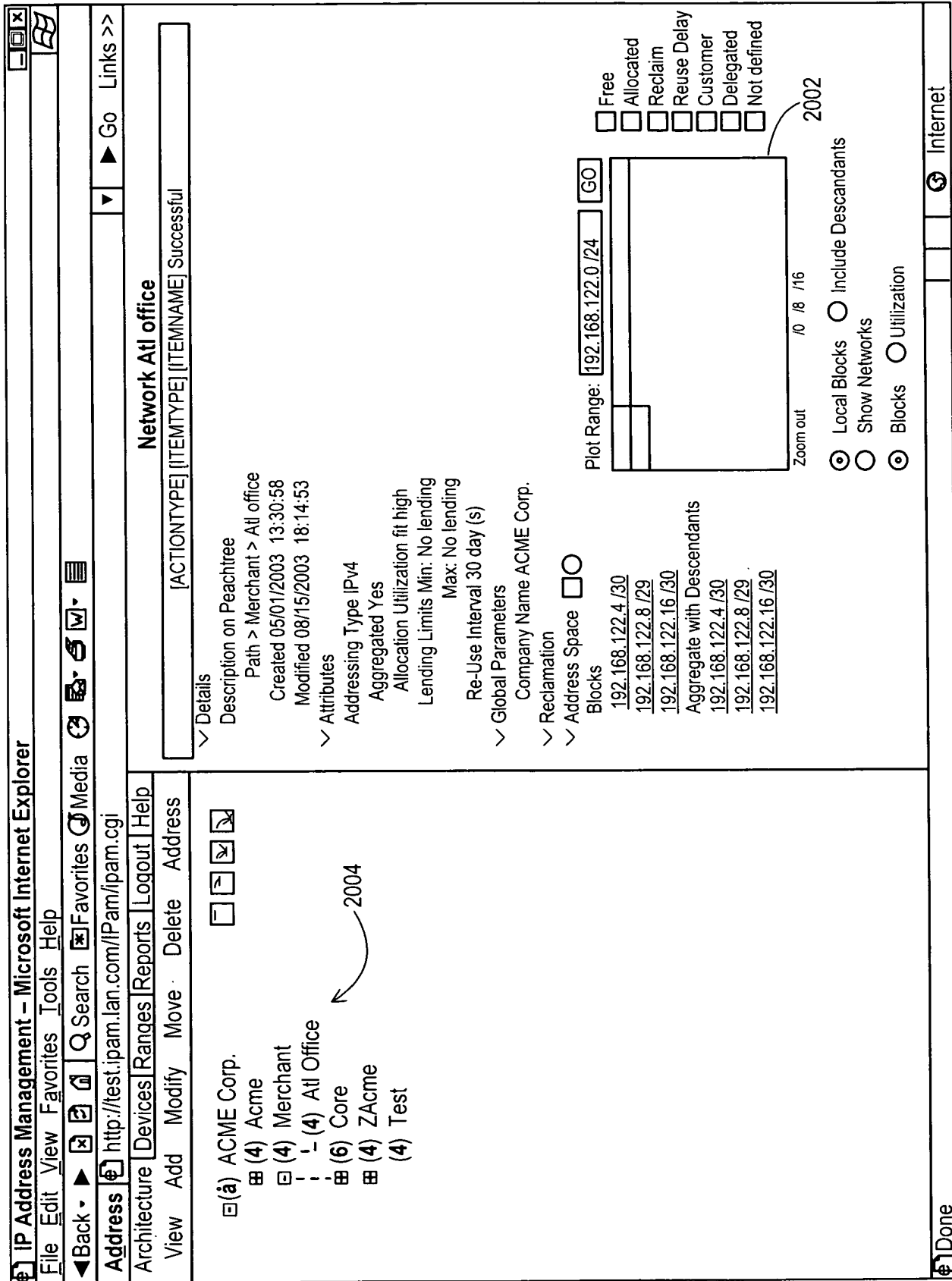


FIG. 20

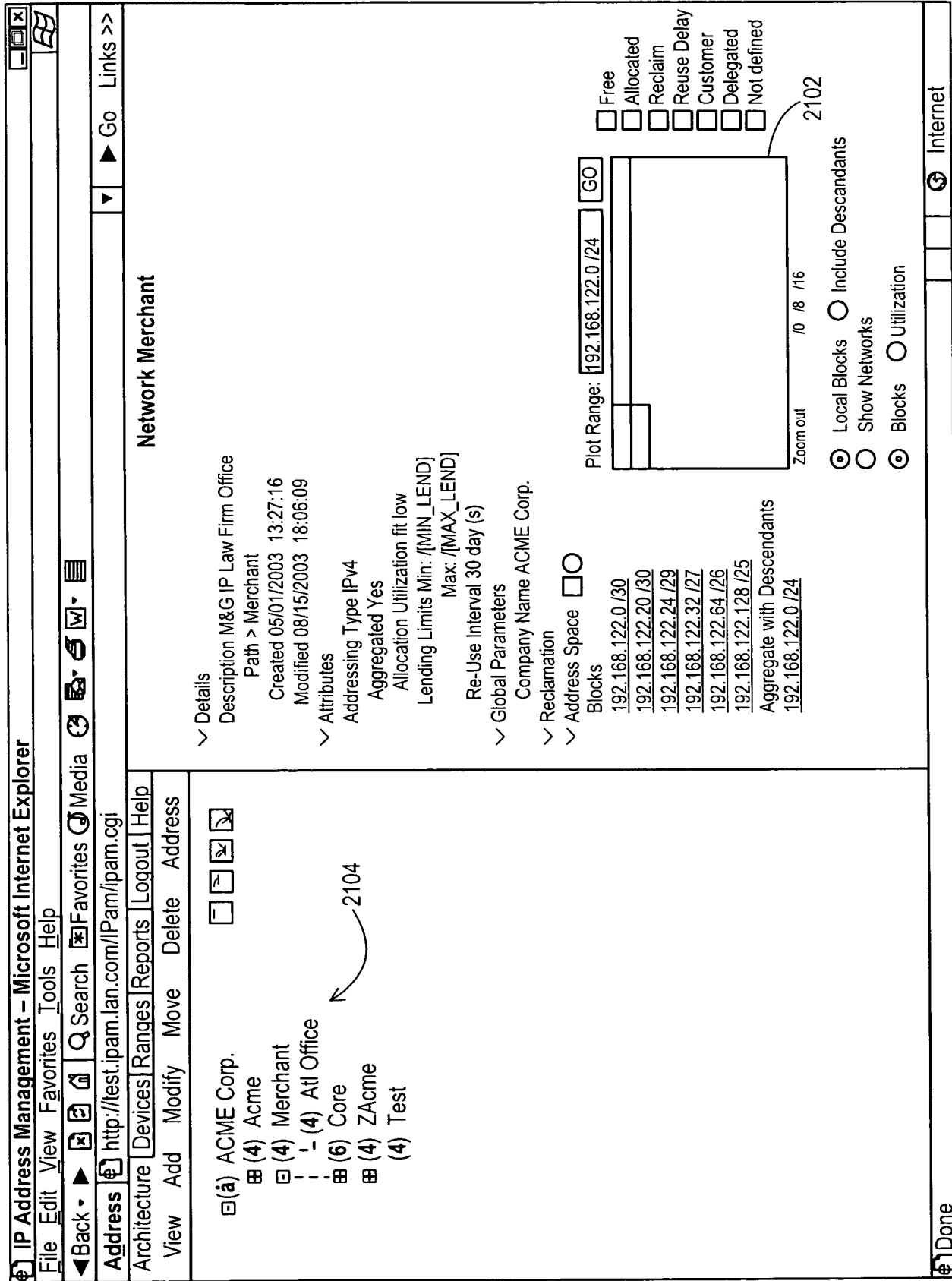


FIG. 21

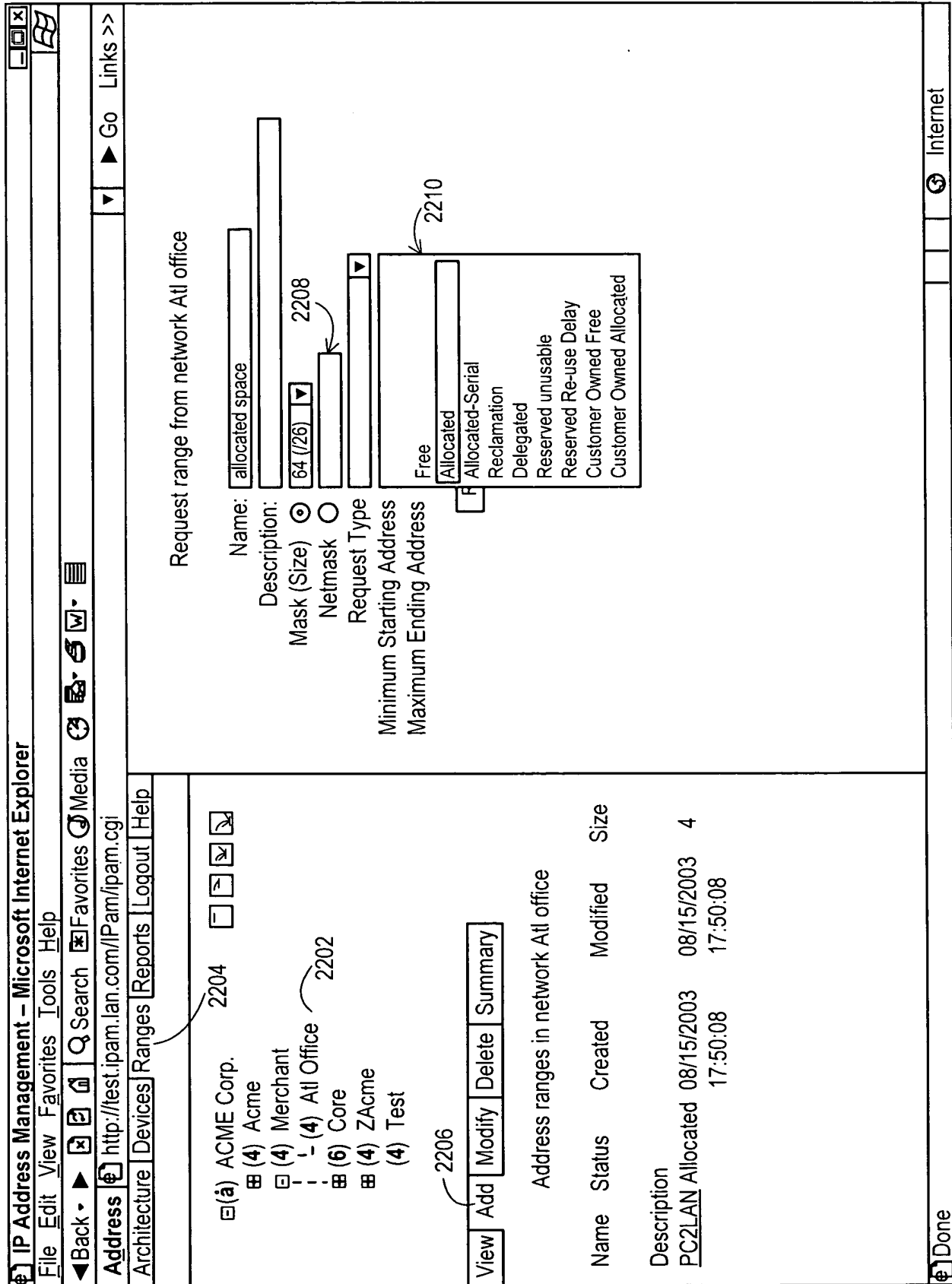


FIG. 22

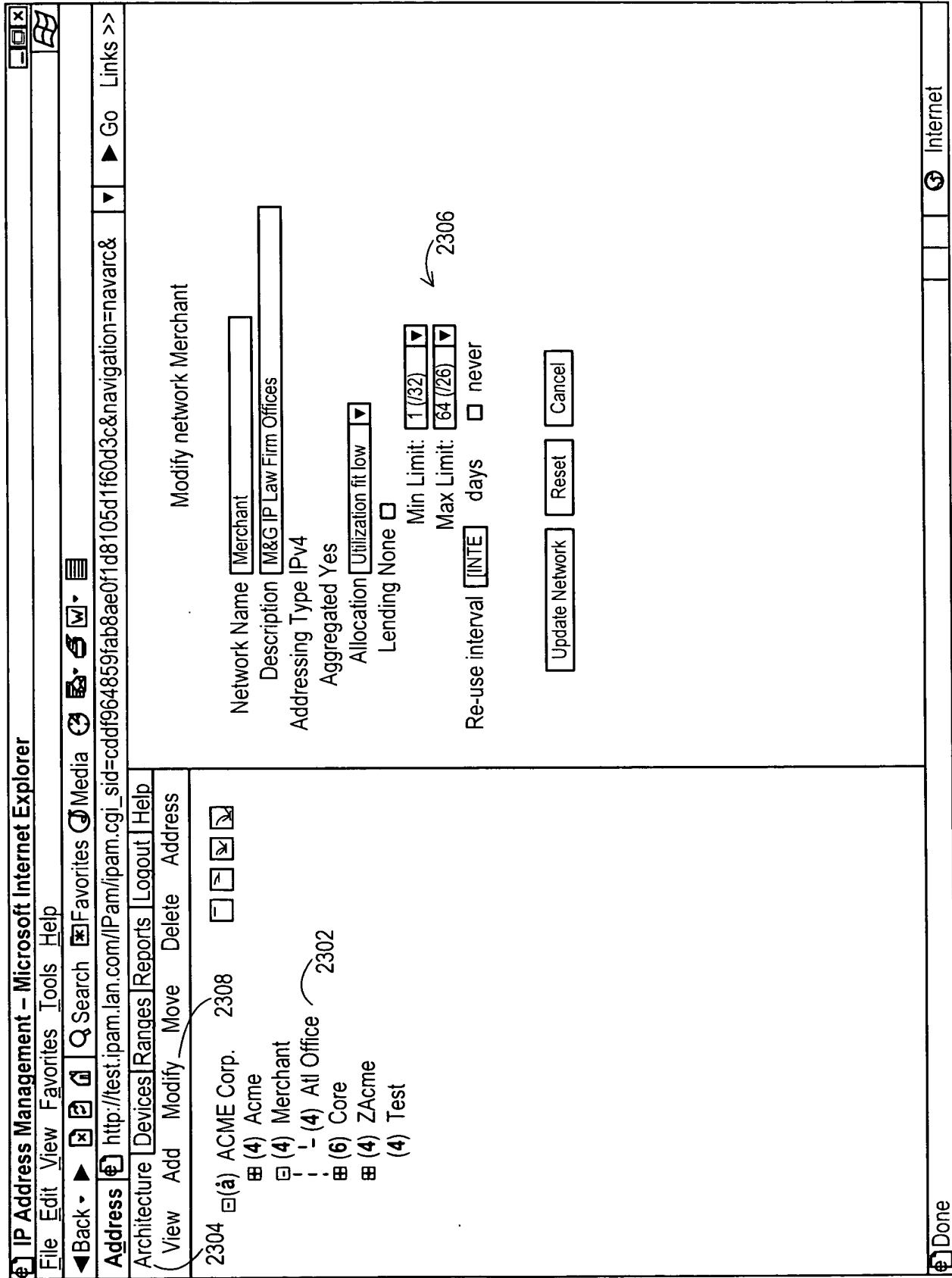


FIG. 23

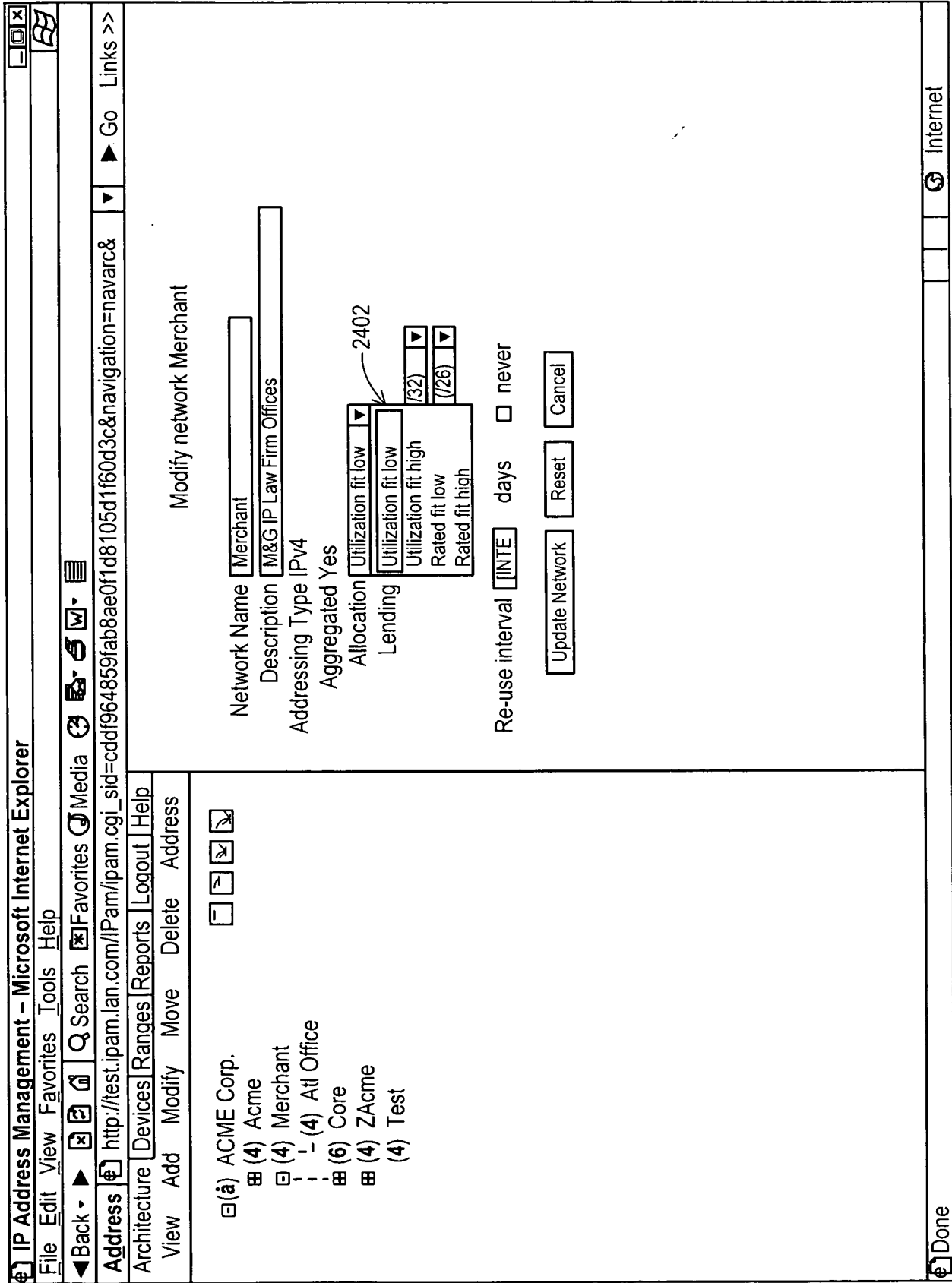


FIG. 24

2400

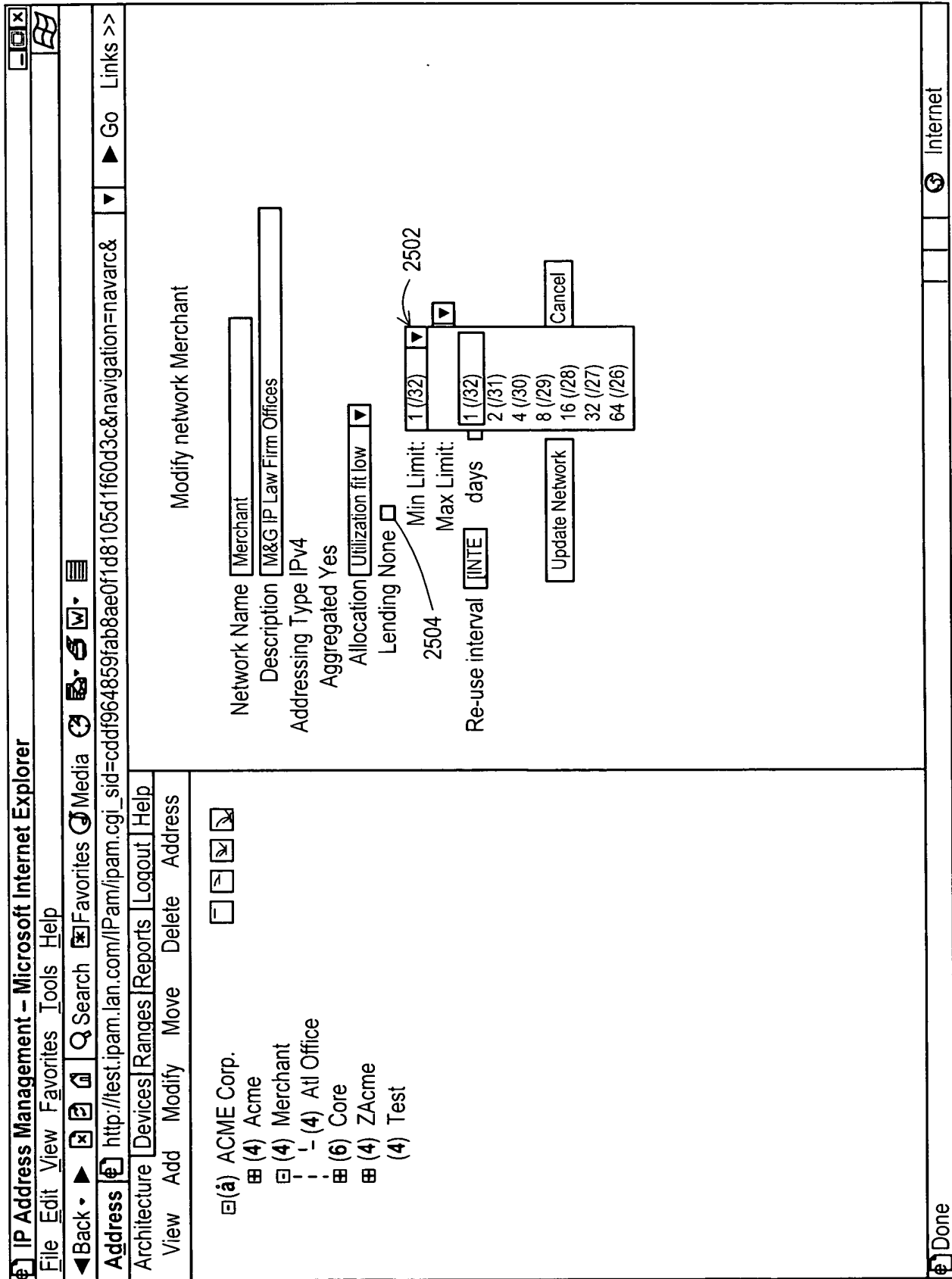


FIG. 25

2500

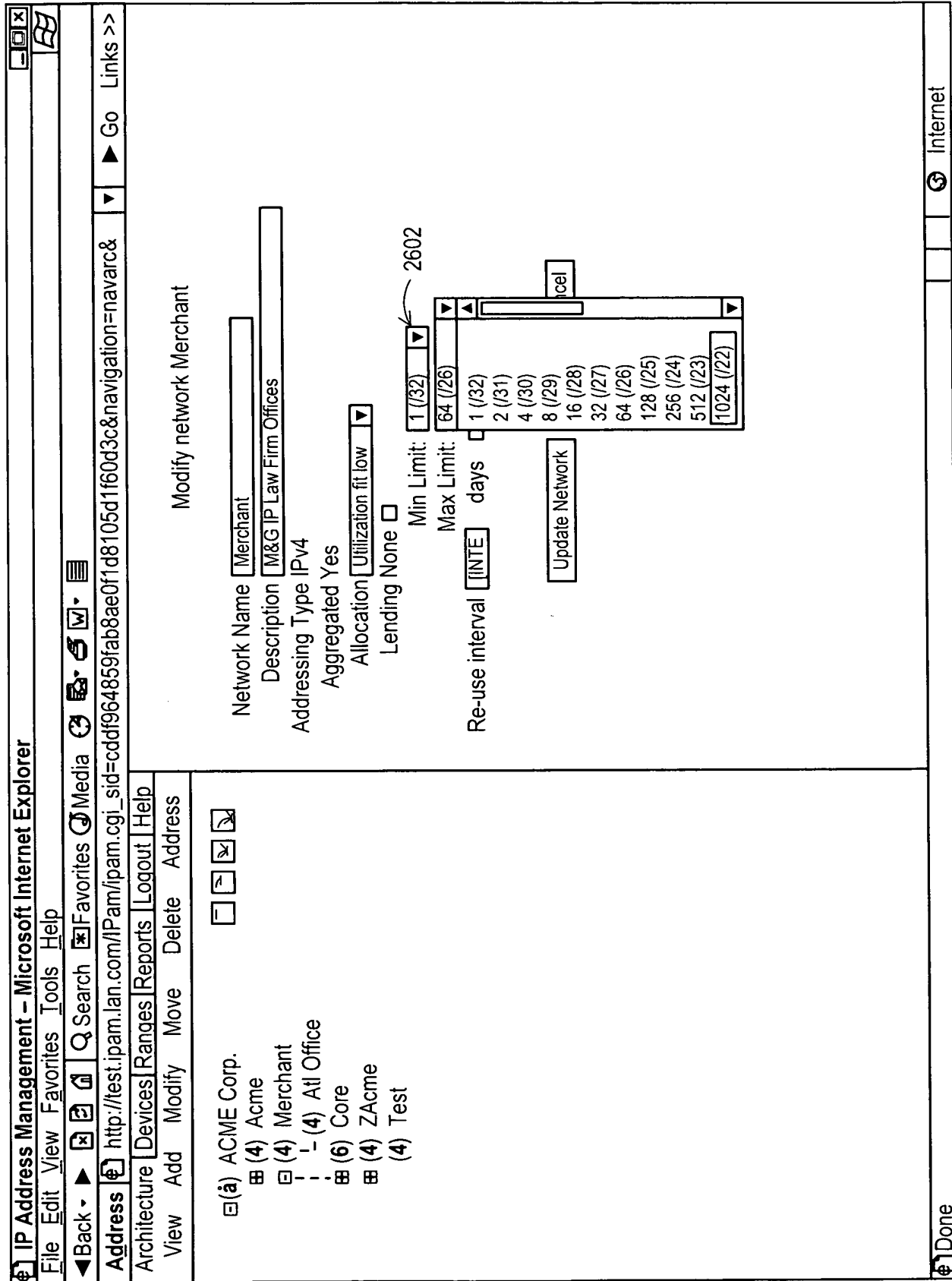


FIG. 26

2600

IP Address Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://test.ipam.lan.com/IPam/ipam.cgi

Architecture Devices Ranges Reports Logout Help

- [-] ACME Corp. 2704
- [-] (4) Acme
- [-] (4) Headquarters
- [-] (4) Accounting
- [-] (4) Engineering
- [-] (4) Sales
- [-] (4) Testing
- [-] (4) Merchant
- [-] (4) Atl Office 2702
- [-] (6) Core
- [-] (6) Sol
- [-] (6) Earth
- [-] (6) Canis Major
- [-] (6) Canis Minor
- [-] (4) ZAcme
- [-] (4) Test 2706

Confirm delete of range allocated space

Parent Network	Atl office
Description	
Created	18/08/2003 17:49:36
Modified	18/08/2003 17:49:36
Addresses	192.168.122.64 /26 2712
Status	Allocated
Netmask	255.255.255.192
Wildcard	0.0.0.63
Broadcast	192.168.122.127
Size	64

Delete range allocated space

View Add Modify Delete Summary

Address ranges in network Atl office

Name	Status	Created	Modified	Size
PC2LAN	Allocated	08/15/2003	08/15/2003	4
		17:50:08	17:50:08	
allocated	Allocated	08/18/2003	08/18/2003	64
space		17:49:36	17:49:36	

Max Records to display:

FIG. 27

IP Address Management – Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://test.ipam.lan.com/IPam/ipam.cgi

Architecture Devices Ranges Reports Logout Help

ACME Corp.

- (4) Acme
- (4) Headquarters
- (4) Accounting
- (4) Engineering
- (4) Sales
- (4) Testing
- (4) Merchant
- (4) Atl Office 2802
- (6) Core
- (6) Sol
- (6) Earth
- (6) Canis Major
- (6) Canis Minor
- (4) ZAcme
- (4) Test

View Address Range allocated space Successful

Address	Mask	Size	Status	Owner
192.168.122.4	30	4	Allocated	PC2LAN ↗
192.168.122.8	30	4	Allocated	PC2LAN3 ↗
192.168.122.12	30	4	Allocated	PC2LAN
192.168.122.16	30	4	Reserved	Re-use Delay
192.168.122.28	31	2	Free	
192.168.122.30	31	2	Allocated	
192.168.122.64	26	64	Free	PC2LANaa ↗

Max Records to display:

View address details for network Atl office

Done

Internet

FIG. 28

IP Address Management – Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Media

Address http://test.ipam.lan.com/IPam/ipam.cgi

Architecture Devices Ranges Reports Logout Help

ACME Corp.

- (4) Acme
- (4) Headquarters
- (4) Accounting
- (4) Engineering
- (4) Sales
- (4) Testing
- (4) Merchant
- (4) Atl Office 2902
- (6) Core
- (6) Sol
- (6) Earth
- (6) Canis Major
- (6) Canis Minor
- (4) Zacme
- (4) Test

Address ranges in network Atl office

Name	Status	Created	Modified	Size
PC2LAN	Allocated	08/15/2003	08/15/2003	4
		17:50:08	17:50:08	

View Add Modify Delete Summary

View address details for network Atl office

Delete Address Range Test 2 Successful

Address	Mask	Size	Status	Owner
192.168.122.4	30	4	Allocated	PC2LAN ↗
192.168.122.8	30	4	Allocated	PC2LAN3 ↗
192.168.122.12	30	4	Allocated	PC2LAN
192.168.122.16	30	4	Reserved	Re-use Delay
192.168.122.28	31	2	Free	
192.168.122.30	31	2	Allocated	PC2LANaa ↗
192.168.122.64	27	32	Free	
192.168.122.96	28	16	Free	
192.168.122.112	29	8	Free	
192.168.122.120	30	4	Free	
192.168.122.124	30	4	Reserved	Re-use Delay
				Test 2

Max Records to display:

FIG. 29

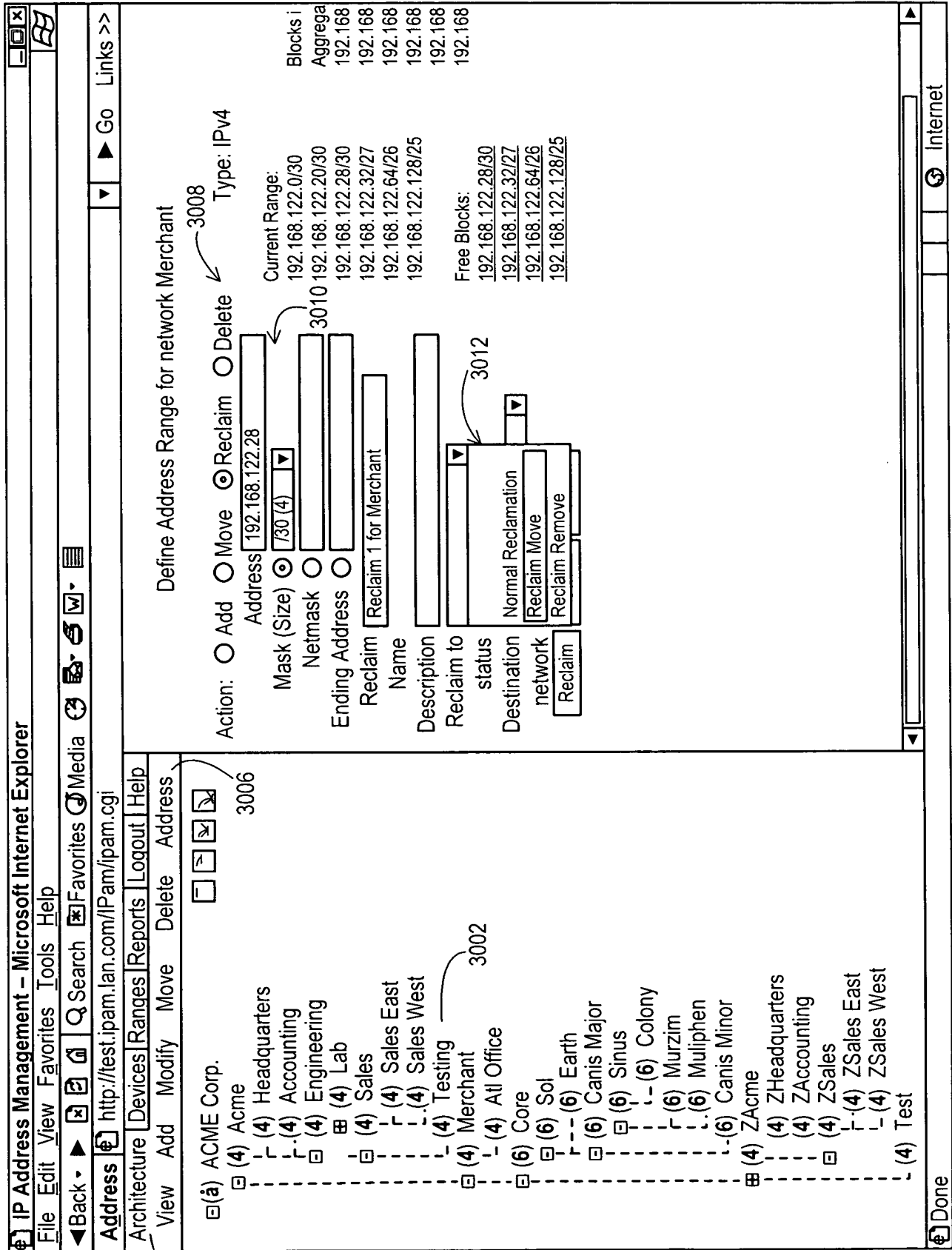


FIG. 30

IP Address Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Media

Address http://test.ipam.ian.com/IPam/ipam.cgi

Architecture Devices Ranges Reports Logout Help

View Range allocated space

Add Address Range 192.168.122.64 Successful

Parent Network Atl office

Description	19/08/2003 14:35:33
Created	18/08/2003 14:35:33
Modified	192.168.122.64 /26
Addresses	Status Allocated
	Netmask 255.255.255.192
	Wildcard 0.0.0.63
	Broadcast 192.168.122.127
	Size 64

ACME Corp.

- (4) Acme
 - (4) Headquarters
 - (4) Accounting
 - (4) Engineering
 - (4) Sales
 - (4) Testing
 - (4) Merchant
 - (4) Atl Office
 - (6) Core
 - (6) Sol
 - (6) Earth
 - (6) Canis Major
 - (6) Canis Major
 - (4) ZAcme
 - (4) Test

Address ranges in network Atl office

Name	Status	Created	Modified	Size
PC2LAN	Allocated	08/15/2003	08/15/2003	4
allocated	Allocated	08/19/2003	08/19/2003	64
space		17:50:08	14:35:33	

Max Records to display: Update

Done Internet

FIG. 31

3100

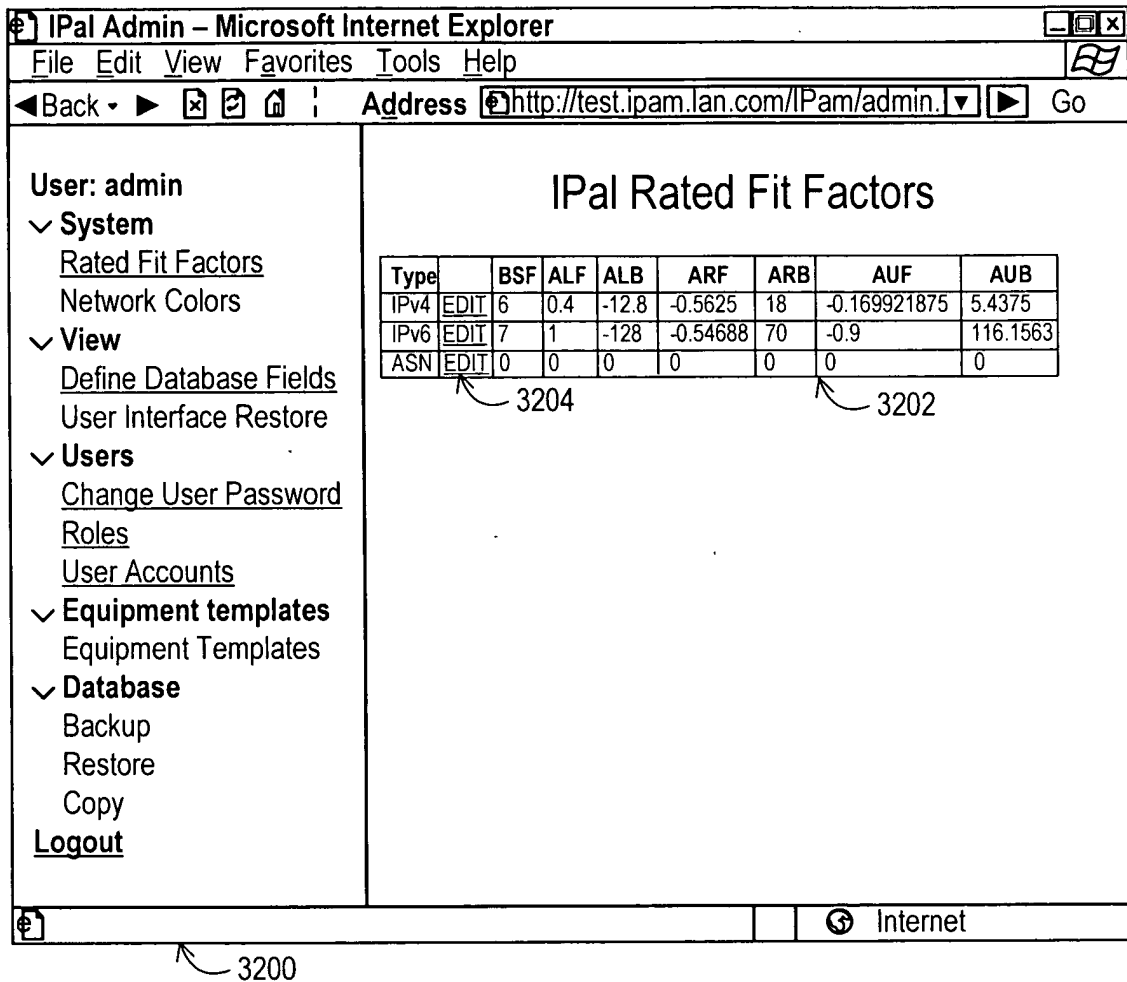


FIG. 32

IPal Factor Wizard - Microsoft Internet Explorer

File Edit View Favorites Tools Help | ◀ Back ▶ »! Address [] Go []

IPal Factor Wizard

The rating factor determine when one block will be chosen over another favorable but larger block.

3212 Address Type

During a lend operation, some blocks may aggregate with the borrowing child network. These blocks are favored for loaning to the child unless they are much larger than the request. delta_Lend is the difference in bits between a large block that will aggregate with a requesting child and a small block that will not aggregate with any child.

3216 Yes No Is this value constant throughout the entire address range?
 2 What is delta_Lend for the smallest blocks?
 0 3214 What is delta_Lend for the largest blocks?

3218 A network may have some free blocks that aggregate with a child network. During a lend or allocation, these blocks are reserved in favor of blocks that will not aggregate, unless the non-aggregate block is much larger. delta_Reserve is the difference in bits between a large non-aggregate block and a smaller block that would aggregate with a child.

3222 Yes No Is this value constant throughout the entire address range?
 3 What is delta_Reserve for the smallest blocks?
 0 3220 What is delta_Reserve for the largest blocks?

3224 Blocks that will aggregate with a child network can be reserved more strongly if the child network has high utilization of its address space.

3230 Yes No 3226 Does child utilization affect reservation?
 Yes No Is the effect constant throughout the entire address range?
 1 How much larger is delta_reserve at 100% utilization for the smallest blocks?
 0 3228 How much larger is delta_reserve at 100% utilization for the largest blocks?

Factors	Block Mask	3236		3238			
		No Agg	Agg with borrower	Agg with child, 0% util	Agg with child, 50% util	Agg with child, 100% util	
BSF	6	32	0.000	-12.800	18.000	20.718	23.437
ALF	0.4	31	6.000	-6.400	23.437	26.071	28.705
ALB	-12.8	30	12.000	0.000	28.875	31.423	33.972
ARF	-0.5625	29	18.000	6.400	34.312	36.776	39.240
ARB	18	28	24.000	12.800	39.750	42.128	44.507
AUF	-0.169921875	27	30.000	19.200	45.187	47.481	49.775
AUB	5.4375	26	36.000	25.600	50.625	52.833	55.042
	Show Ratings	25	42.000	32.000	56.062	58.186	60.310
	Clear Ratings	24	48.000	38.400	61.500	63.539	65.578
	Reset	23	54.000	44.800	66.937	68.891	70.845
	Update	22	60.000	51.200	72.375	74.244	76.113
	Cancel	21	66.000	57.600	77.812	79.596	81.380
		20	72.000	64.000	83.250	84.949	86.648
		19	78.000	70.400	88.687	90.301	91.916
		18	84.000	76.800	94.125	95.654	97.183
		17	90.000	83.200	99.562	101.006	102.451
		16	96.000	89.600	105.000	106.359	107.718

Done [] Internet []

FIG. 32A

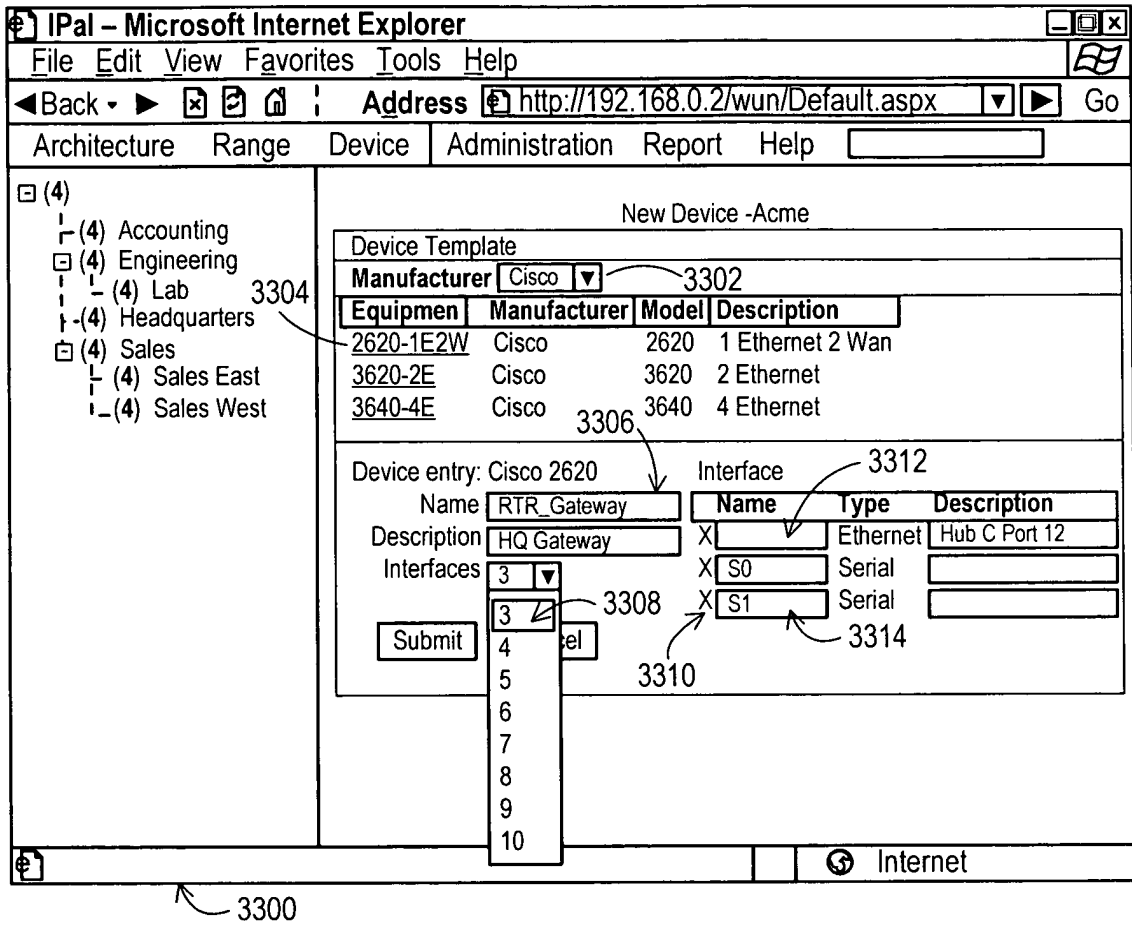


FIG. 33

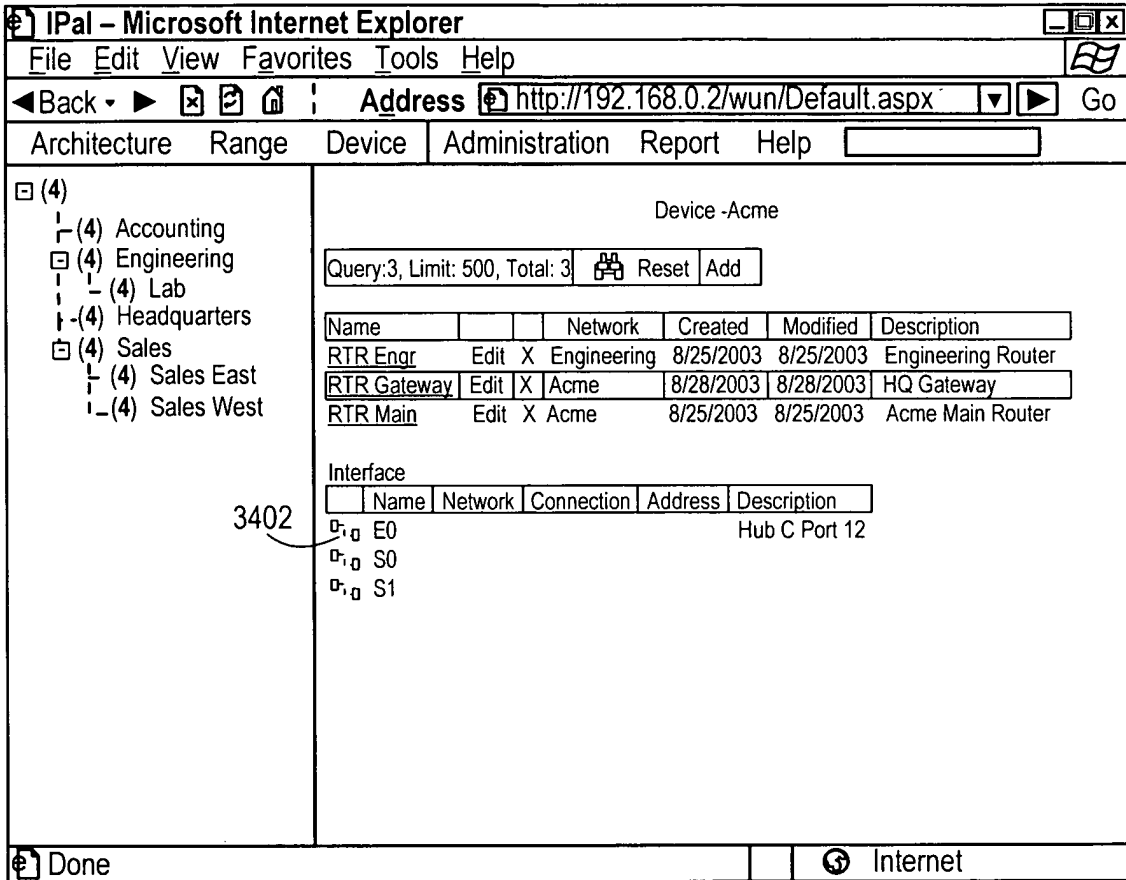


FIG. 34

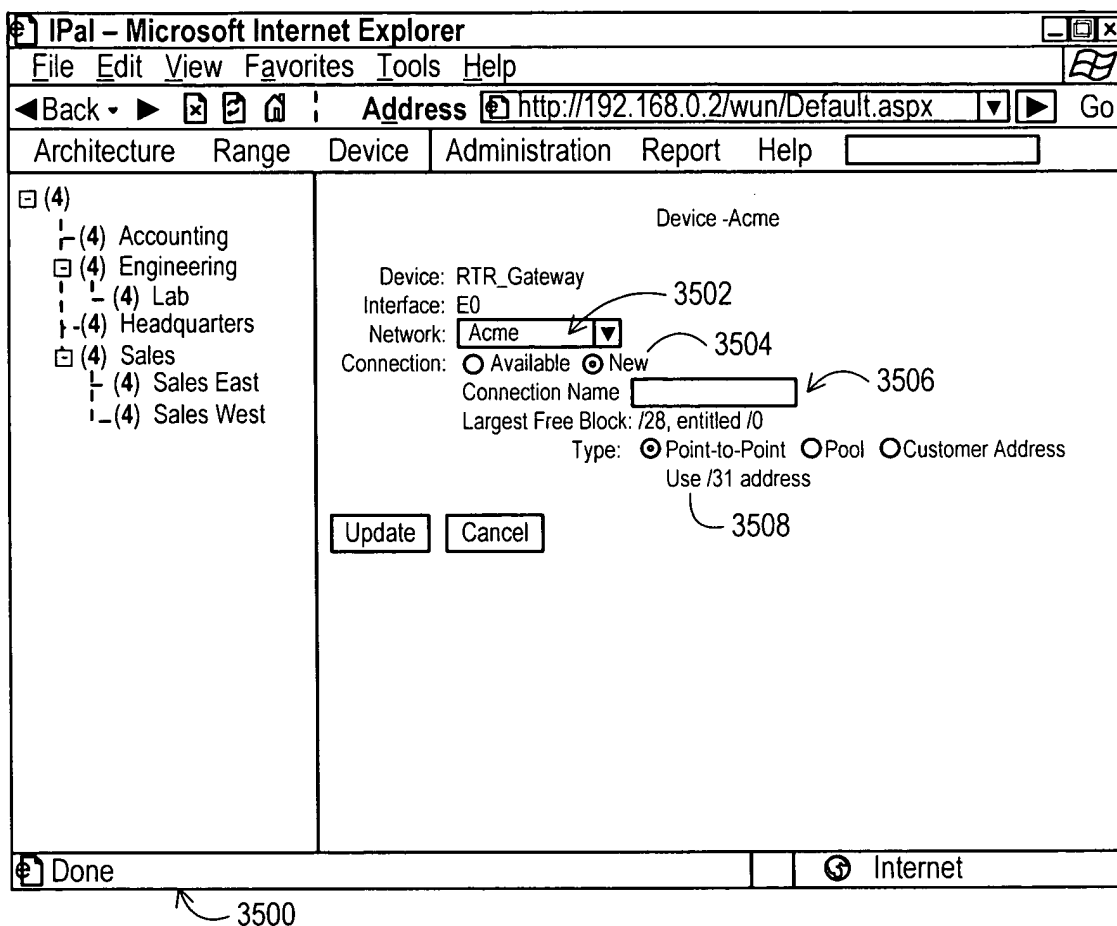


FIG. 35